Management Earnings Guidance and Future Credit Rating Agency Actions

by

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ABSTRACT

While credit rating agencies use both forward-looking and historical information in evaluating a firm's credit risk, the role of forward-looking information in their rating decisions is not well understood. In this study, I examine the association between management earnings guidance news and future credit rating changes. While upward earnings guidance is not informative for credit rating changes, downward earnings guidance is significantly and positively associated with both the likelihood and speed of rating downgrades. In cross-sectional analyses, I find that downward guidance is especially informative in two important circumstances: (i) when a firm's current credit rating is overly optimistic compared to a model predicted rating, and (ii) when the relevance or reliability of alternative information sources is lower. In addition, I find that downward guidance is associated with lower future cash flows, as well as a higher volatility of future cash flows. Overall, the results are consistent with credit rating agencies incorporating voluntary bad news disclosures into their decisions about whether and when to downgrade a firm.

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CHAPTER 1

INTRODUCTION

Corporate credit ratings represent the judgment of credit analysts on a firm's capacity to meet its financial obligations. As credit ratings capture a significant aspect of credit risk, academics in the fields of accounting and finance have actively studied the determinants of credit ratings since at least the work of Horrigan (1966). Despite the fact that credit ratings are designed to be forward-looking, existing studies on credit rating estimation and prediction focus almost exclusively on historical accounting and stock market data; consequently, the relevance of forward-looking information for credit rating analysis is not well understood.[1] Nevertheless, publicly available management earnings guidance provides a unique opportunity to examine the role of voluntarily disclosed forward-looking information on credit ratings, especially since earnings guidance is sometimes mentioned in the research reports and rating rationales of credit rating agencies (CRAs).[2]

Understanding the role of voluntarily disclosed forward-looking information on credit ratings is potentially important for investors and other credit rating users. Especially, in recent years investors have often criticized CRAs for issuing untimely and biased credit ratings, yet both equity and debt market investors still perceive credit rating downgrades to be informative and react strongly to such rating changes (Micu et al. 2006,

[1] One plausible reason for such an omission is the unavailability of forward-looking data because it is, for the most part, privately communicated to credit rating agencies by managers.

[2] As an example, Standard & Poor's (S&P) cut the long-term credit rating of Nokia from BB+ to BB- on August 15, 2012, noting that the company's Q3 earnings guidance was worse than expected. As another example, S&P downgraded Toyota's long-term credit rating from AA+ to AA on May 8, 2009, following the company's announcement of weak annual earnings guidance.

Chava et al. 2012). As such, by understanding the implications of managers' voluntary disclosures for credit ratings, credit rating users could better anticipate future rating changes and take prompt actions, given that CRAs are known to gradually incorporate information into credit ratings (Cheng and Neamtiu 2009).

Although prior literature has studied how management guidance impacts the credit default swap (CDS) spread (Shivakumar et al. 2011), little is known about how guidance affects CRAs' rating decisions. What is known about CDS spreads may not generalize to corporate credit ratings because such ratings are designed to measure relative credit risk over long-investment horizons, prompting CRAs to place less weight on the short-term indicators of credit quality. Furthermore, unlike the CDS market, CRAs usually do not respond to new information immediately in order to achieve rating stability (Altman and Rijken 2004, Cheng and Neamtiu 2009). To better understand whether and how CRAs utilize voluntary earnings guidance, I investigate the informativeness of earnings guidance news for the likelihood and timeliness of credit rating changes, explore several conditions under which earnings guidance news may be of enhanced importance, and shed light on the nature of the information found in earnings guidance.

Using a sample of quarterly management earnings guidance from 1995-2010, I model a firm's future credit rating change as a function of management guidance news and changes in firm fundamentals that capture financial risk and the information environment (e.g., Kaplan and Urwitz 1979, Ziebart and Reiter 1992, Francis et al. 2005, Ashbaugh-Skaife et al. 2006, Barth et al. 2008, Cheng and Subramanyam 2008). In particular, I measure a firm's credit rating change over various future time horizons,

specifically from the guidance issuance date to the end of the guidance quarter or each of the subsequent three quarters, allowing an observation of CRAs' rating actions over time.[3] To provide further evidence on the relevance of earnings guidance for credit ratings, I also examine whether guidance news is associated with the timeliness of future credit rating changes, where timeliness is measured as the number of months between the guidance issuance date and the next credit rating change.

The findings of this study are as follows. First, I find a significant and positive relation between earnings guidance news and a firm's credit rating changes in the three quarters following the guidance issuance, but not in the guidance quarter. In addition, the economic significance of guidance news increases over the subsequent three quarters, suggesting that CRAs respond to some management guidance news with a delay. Regarding the timeliness of future credit rating changes, I find that guidance news is associated with the timeliness of future credit rating downgrades, but not upgrades. Importantly, these results pertain only to downward earnings guidance, consistent with such guidance being more useful due to the asymmetric payoff function of creditors (Shivakumar et al. 2011) and/or more credible due to managers' tendency to withhold bad news (Kothari et al. 2009). Overall, the results are consistent with CRAs

[3] In a rating agencies survey prepared by the Association for Financial Professionals, about half of the surveyed respondents (from companies that experienced a downgrade) report that it took CRAs between one and six months to incorporate deteriorations in the firm's financials into the rating changes; about one-fourth of the respondents report that a downgrade took place more than six months after the deterioration in the firm's financials.

incorporating the information contained in bad news earnings guidance into their decisions about whether and when to downgrade a rating.[4]

Next, the informativeness of downward earnings guidance about CRA actions depends on the magnitude of the deviation between a firm's actual credit rating and expected rating.[5] Prior literature indicates that CRAs usually do not change credit ratings in response to temporary deviations between actual and expected ratings in order to maintain the rating stability (Altman and Rijken 2004). However, when management guidance sends out a signal that is inconsistent with the current rating deviation being temporary (e.g., when a firm with a currently overoptimistic credit rating voluntarily discloses bad news), CRAs may be prompted to make a rating change in the direction of the expected rating in order to maintain a reputation for rating accuracy. Consistent with this conjecture, I find that downward guidance is more informative about the likelihood of future credit rating downgrades when a firm's current rating is more optimistic than the expected rating. In addition, this association is stronger when the two ratings straddle the investment-grade cutoff (i.e., the actual rating is BBB- or higher while the expected rating is BB+ or lower). Consistent with this reasoning, downward guidance is also associated with timelier downgrades under these two conditions.

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[4] An alternative explanation is that CRAs are responding independently to the same news (e.g., macroeconomic, industry, or other firm-level news) that is prompting the earnings guidance news. To eliminate this alternative explanation, in addition to controlling for the changes in firm fundamentals, I use the calendar quarter fixed effects to control for the contemporaneous macroeconomic news in all empirical analyses. The inferences of the study are also robust to alternative specifications (untabulated) that control for (1) industry-quarter fixed effects as proxies for industry-level news, (2) seasonally-adjusted changes in ROA and earnings surprises in the current and subsequent three quarters as proxies for actual earnings news, and (3) stock market reaction around earnings guidance and buy-and-hold stock returns over the current and subsequent three quarters as proxies for contemporaneous news.

[5] Specifically, I estimate a credit rating model similar to that of Cheng and Subramanyam (2008) using ordered-logit regression. Then, I measure the expected ratings as the rating category with the highest fitted probability from the estimation. Appendix B presents the model specification and estimation results.

CRAs have many competing information sources at their disposal, including financial statements and analyst research. I conjecture that management guidance will be especially relevant for CRAs when the relevance or reliability of these alternative sources for credit risk evaluation is lower. Consistent with this conjecture, I find that downward guidance is more informative about the likelihood of future credit rating downgrades and is associated with timelier downgrades following a decrease in a firm's financial reporting transparency (e.g., Ashbaugh-Skaife et al. 2006, Gu 2007, Cheng and Subramanyam 2008, Barth et al. 2013), or an increase in intangible intensity (e.g., Lev and Zarowin 1999). Similarly, I find that downward guidance is more informative about the likelihood of future credit rating changes following a decrease in analyst coverage, a proxy for the availability and reliability of financial analyst research in evaluating a firm's credit risk. Overall, voluntary bad news disclosures appear to play a more prominent role in CRAs' rating decisions when the relevance or reliability of these alternative information sources is lower.

Finally, while the above findings reveal the importance of earnings guidance for future rating changes, it is not clear what kind of information about credit risk is conveyed by the earnings guidance. To investigate this issue, I consider both the level and volatility of future cash flows. My results show that negative earnings guidance news is associated with lower future cash flows as well as a higher volatility of future cash flows. Interestingly, the upward guidance does not bear this same relation with future cash flows. These results provide not only direct support for the relevance of downward guidance for credit risk evaluation, but also some explanation as to why downward guidance is more informative than upward guidance with respect to future CRA actions.

The findings of this study make several contributions to the literature. First, I provide systematic evidence consistent with CRAs incorporating downward earnings guidance into their long-term credit opinions. This evidence further supports the importance of voluntary earnings disclosures for the debt market. Importantly, while prior literature provides descriptive evidence that analyst earnings forecast revisions contain some information about future credit rating changes (Ederington and Goh 1998) [6], there are reasons to believe that management guidance, if available, is a more relevant source of forward-looking information.[7] To the best of my knowledge, this is the first study to document the association between voluntarily disclosed forward-looking information and future CRA actions.

Second, the findings have practical implications for practitioners, especially credit rating users. In particular, downward earnings guidance appears to be a leading indicator of future credit rating downgrades. In this regard, the results of the cross-sectional analyses may be especially useful for credit rating users to address the lack of timeliness of credit ratings and anticipate possible credit rating downgrades, which are often

[6] Specifically, Ederington and Goh (1998) find that downgrades are preceded by declines in consensus analyst forecasts and that consensus analyst forecasts continue to decline after downgrades. The latter result suggests that analyst earnings forecasts contain incomplete information about the upcoming credit rating downgrades.

[7] Some of the reasons are as follows. First, CRAs sometimes mention management earnings guidance in their rating rationales and research reports. Second, CRAs are allowed to interact with a firm's management and use the private information received directly from managers as inputs to credit analysts' models (Standard & Poor's 2012b), at least in the pre-Dodd-Frank period. In terms of the impact of Dodd-Frank Act, I expect the publicly available earnings guidance to be an even more important information source for CRAs in the post-Dodd-Frank period, where CRAs are no longer exempted from Reg FD. Third, in contrast to financial analysts who are commonly viewed as industry specialists, managers are firm specialists and are expected to have more precise private information about the firms' future cash flows and credit risk (Hutton et al. 2012, Brown et al. 2015). Finally, management earnings guidance news, defined as forecast revision from prior analyst consensus, may be estimated with greater accuracy relative to analyst earnings forecast news. This is because analysts tend to systematically revise their forecasts downward throughout the fiscal period, making it challenging to identify the true earnings news.

accompanied by economically significant debt and equity market reactions (e.g., Hand et al. 1992, Goh and Ederinton 1993, Micu et al. 2006, Chava et al. 2012).

Finally, the findings contribute to the management guidance literature by showing that managers' downward guidance may have negative credit rating consequences. Although downward earnings guidance can be a useful tool for expectation management (Cotter et al. 2006) and litigation risk management (Skinner 1994), managers need to consider the potential credit rating impact of their voluntary bad news disclosures. In addition, the generally insignificant results for upward guidance suggest that managers are unlikely to achieve better credit ratings by issuing upward-biased short-term earnings guidance.

CHAPTER 2

LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

Management Earnings Guidance and Credit Rating Agency Actions

CRAs are specialized professional institutions that analyze and evaluate the creditworthiness of countries, companies, and various debt instruments, and their credit ratings are extensively used by capital market participants and regulators. While CRAs claim to use both forward-looking and historical information in evaluating a firm's credit risk (Standard & Poor's 2012a), how forward-looking information affects their rating decisions is not well understood. Nevertheless, publicly available management earnings guidance provides a unique opportunity to examine this issue, especially since earnings guidance is sometimes mentioned in CRAs' rating rationales.

It is well documented that management guidance contains value-relevant information for equity investors and analysts (e.g., Patell 1976, Penman 1980, Waymire 1984, Cotter et al. 2006, Feng and McVay 2010). More recently, Shivakumar et al. (2011) document the CDS market's response via changes in CDS spreads to management guidance, further suggesting the relevance of guidance news for credit risk evaluation. However, in contrast to the CDS market that timely incorporates relevant information into CDS spreads, CRAs are known to gradually incorporate information into credit ratings (Cheng and Neamtiu 2009). In addition, since corporate credit ratings are aimed to capture long-term and relative credit risk, such ratings are more sensitive to the long-term than short-term indicators of credit risk (Altman and Rijken 2004). As such, the relation between management guidance and credit ratings is ultimately an empirical question.

Suppose CRAs incorporate the information contained in management earnings guidance into their rating decisions, the relevance of downward and upward earnings guidance are likely to differ. On one hand, CRAs may be prompted to respond more strongly to negative earnings news due to the asymmetric upside and downside potentials for lenders and debt investors (Callen et al. 2009, Easton et al. 2009, Shivakumar et al. 2011, DeFond and Zhang 2014). On the other hand, downward earnings guidance may be viewed as more credible and useful by CRAs, given that managers tend to withhold bad news but reveal good news quickly (Kothari et al. 2009). Based on these literatures, if management guidance is associated with CRA actions, then such an association is expected to be stronger for downward guidance.

Does the Deviation between Acual and Expected Credit Ratings Affect the Relevance of Management Earnings Guidance?

At least since the bankruptcy of Enron, who is still assigned an investment-grade rating on the day before bankruptcy, CRAs have been repeatedly accused of issuing untimely and biased credit ratings (Cheng and Neamtiu 2009). Obviously, credit ratings do not always coincide with the market perception of credit quality, which may be proxied by the expected ratings derived from a credit rating estimation model. Part of this can be attributed to CRAs' long-term focus, which prevents CRAs from correcting for temporary deviations between a firm's credit rating and the expected rating (Altman and Rijken 2004). However, when management guidance sends out a signal that is inconsistent with the current rating deviation, the model predicted rating is not likely to converge to the actual rating at least in the short run; as a result, CRAs may be prompted to make a rating change in the direction of the expected rating. If this is the case, bad

news earnings guidance would be especially likely to trigger a rating downgrade when a firm's current rating is overly optimistic compared to the expected rating.

In addition to CRAs' long-term focus, the rating deviations may also be attributed to CRAs' incentives to issue optimistic credit ratings, especially under the issuer-pay model (Jiang et al. 2012) and the increased competition in the credit rating industry (Becker and Milbourn 2011). Despite the incentives to maintain optimistic ratings for clients, reputational concerns could prompt CRAs to adjust the overoptimistic ratings in response to managers' voluntary bad news disclosures.[8] In sum, regardless of the reasons for the rating deviations, I hypothesize that the association between downward earnings guidance and future credit rating changes is stronger when a firm's credit rating is currently overoptimistic.

Does the Relevance or Reliability of Alternative Information Sources Affect the Relevance of Management Earnings Guidance?

CRAs have many competing information sources at their disposal. In order to arrive at a rating decision, CRAs must determine how much weight should be assigned to each information source; as a result, the importance of one information source is dependent on the others. Regarding management earnings guidance, its importance is likely to be greater when financial statements are less useful in assessing the magnitude, timing, and risk of future cash flows. Following prior literature (e.g., Ashbaugh-Skaife et al. 2006, Gu 2007, Cheng and Subramanyam 2008, Barth et al. 2013), I consider the

[8] According to a Bear Stearns & Co equity analyst in June 2007, S&P claimed that "reputation is more important than revenues." Also, in a Bloomberg news article, Moody's CEO Raymond McDaniel stated that "we are in a business where reputational capital is more important" (Becker and Milbourn 2011).

impact of a firm's financial reporting transparency and hypothesize that the relevance of management guidance for credit ratings would be enhanced following a decrease in financial reporting transparency.[9]

In addition to a firm's overall financial reporting transparency, prior literature points out financial statements' inability to communicate the value of investments in intangible assets and argues that more disclosure can help resolve such information asymmetry (Lev and Zarowin 1999, Lev 2003, Merkley 2014). In the context of credit ratings, if increased intangible intensity results in greater perceived uncertainty about future cash flows and credit risk, forward-looking earnings guidance could help mitigate such increased uncertainty. Therefore, I hypothesize that the relevance of management guidance for credit ratings would be enhanced following an increase in intangible intensity.

Finally, financial analyst research may be an alternative source of forward-looking information for CRAs. In particular, prior literature has examined the role of financial analysts in the debt market and found that analyst activity is negatively associated with a firm's default risk, consistent with both the information and monitoring roles of analysts (Cheng and Subramanyam 2008, Mansi et al. 2011).[10] This finding suggests that equity analyst research is also perceived to be relevant by debt market

[9] Barth and Schipper (2008) define financial reporting transparency as [the extent to which financial reports reveal an entity's underlying economics in a way that is readily understandable by those using the financial reports]. As such, financial reporting transparency is also associated with the decision usefulness of accounting information for CRAs.

[10] Regarding the information role, Cheng and Subramanyam (2008) and Mansi et al. (2011) document the association between the analyst forecast quality (proxied by forecast error, forecast dispersion, or revision volatility) and a firm's credit risk (proxied by credit rating or yield spread). As for the monitoring role, prior studies suggest that analysts serve as external monitors to management and help reduce agency costs between management and investors, which would in turn increase the firm's expected future cash flows (e.g., Jensen and Meckling 1976, Yu 2008).

investors. Therefore, a decrease in analyst coverage could reduce the availability of analyst research and even the reliability of analyst consensus, resulting in an increase in the importance of management guidance.

Overall, these discussions suggest that earnings guidance may play a more prominent role in CRAs' rating decisions when the relevance or reliability of alternative information sources for credit rating analysis is lower. If so, the association between earnings guidance news and future credit rating changes is expected to be stronger under such a circumstance.

CHAPTER 3

DATA SOURCE, SAMPLE SELECTION, AND KEY VARIABLES

Sample Selection and Sample Distribution

My sample consists of quarterly management earnings guidance issued during the 1995-2010 period with available data for the empirical analyses. I collect Standard and Poor's (S&P) long-term issuer credit ratings from the Compustat database and earnings guidance from the First Call Company Issued Guidance (CIG) database. I obtain the necessary financial statement data from the Compustat Quarterly database, stock return data from the Center for Research on Security Prices (CRSP) database, and analyst earnings forecast data from the Institutional Brokers' Estimate System (I/B/E/S) database.

[INSERT TABLE 1 HERE]

Panel A of Table 1 summarizes the sample selection procedure. I retain quarterly earnings guidance issued between prior earnings announcement date and current fiscal quarter end; if there are multiple earnings guidance available for a firm-quarter, the first guidance is retained. I consider only point and range guidance because the earnings news for such guidance can be measured with greater accuracy. Following prior studies, I exclude guidance associated with firms in financial industries (SIC codes 6000-6999) or regulated industries (SIC codes 4900-4999).[11] Finally, I require credit ratings to be available at the beginning of guidance quarter, and retain guidance with available data to estimate guidance news and calculate control variables. To ensure that earnings guidance

[11] The inferences of the study are robust to the inclusion of these industries.

precedes credit rating changes, I exclude observations with a credit rating change between the beginning of guidance quarter and the guidance issuance date. Panel B of Table 1 presents the time-series distribution of the sample. The number of guidance ranges from 18 in 1995 to 394 in 2003, and the sample sizes by year become more stable after 2000.

Key Variables

Future credit rating change (*ΔCR*). The dependent variables in my main analyses include future credit rating change and the timeliness of credit rating change. Since CRAs are known to gradually incorporate new information into credit ratings, I measure a firm's credit rating change (*ΔCR*) over various future time horizons, specifically from the guidance issuance date to the end of the guidance quarter or each of the subsequent three quarters (i.e., *ΔCR* over quarters q and q + τ, where q is the guidance quarter and τ = 0, 1, 2, or 3). Based on S&P's long-term issuer credit ratings reported on Compustat, I code the AAA rating as 16, the AA+ rating as 15, …, and the B- rating as 1, so that a positive (negative) credit rating change indicates a rating upgrade (downgrade).[12]

Timeliness of credit rating change (*Month_ΔCR*). While measuring credit rating changes over various future time horizons allows an observation of CRAs' rating actions over time, it does not directly speak about the timeliness of such actions. In this regard, if earnings guidance plays a role in CRAs' decisions about when to change a

[12] Prior literature suggests that there is no systematic difference between major CRAs' assigned ratings (e.g., Altman and Rijken 2004, Jiang et al. 2012). Therefore, although I use only S&P's credit ratings, the findings of this study should also apply to other major CRAs such as Moody's and Fitch.

rating, the magnitude of earnings guidance news would be associated with the timeliness of credit rating change (*Month_ΔCR*), measured as the number of rounded months between the guidance issuance date and the next credit rating change. More specifically, I define *Month_DG* (*Month_UG*) as the number of months from the guidance issuance to the next rating downgrade (upgrade). Accordingly, lower values of *Month_DG* and *Month_UG* correspond to timelier credit rating downgrades and upgrades, respectively.

Management earnings guidance news (*MF_NEWS*). As the key variable of interest, management earnings guidance news is measured as earnings guidance minus pre-existing one-quarter-ahead analyst consensus forecast, deflated by the stock price at the beginning of prior quarter. However, for guidance bundled with earnings announcements, which account for approximately 44% of my sample, one-quarter-ahead analyst forecasts are not available. In such a case, I follow Rogers and Van Buskirk (2013) to estimate analysts' conditional expectation as pre-existing two-quarter-ahead analyst consensus forecast adjusted for the predicted analyst forecast revision based on the contemporaneous earnings surprise; then, I use analysts' conditional expectation as the benchmark to measure the earnings guidance news. Importantly, Rogers and Van Buskirk (2013) show that such a procedure is able to substantially reduce the measurement errors in bundled earnings guidance news.[13]

Deviation between actual and expected credit ratings (*DIFF*). Prior literature documents that the deviation between a firm's actual credit rating and expected rating is an important determinant of future credit rating changes (Alissa et al. 2013).

[13] In an untabulated test, I find that the informativeness about future CRA actions is not statistically different for bundled and unbundled earnings guidance news.

Furthermore, such a rating deviation could affect CRAs' response to new information (Altman and Rijken 2004). Therefore, I measure the rating deviation (*DIFF*) as a firm's actual rating minus the predicted rating derived from the credit rating estimation model specified in Appendix B.[14] By construction, a positive *DIFF* suggests that the actual rating is currently more optimistic than the expected rating; in contrast, a negative *DIFF* indicates that the actual rating may be overly pessimistic.

[INSERT TABLE 2 HERE]

Descriptive Statistics

Table 2 presents the descriptive statistics of the key variables. The mean (median) credit rating at the beginning of guidance quarter, $CR_{i,q-1}$, is 7.8135 (8), which is approximately a BBB rating and is comparable to prior studies (e.g., Cheng and Subramanyam 2008). The mean credit rating changes, ΔCRs, are negative and monotonically decreasing over time, indicating that there are more downgrades than upgrades during the sample period of 1995-2010. The mean (median) guidance news, *MF_NEWS*, is 0.0564% (0.0263%) of the stock price, and the standard deviation indicates that there is a substantial variation among firm-quarters. The mean rating deviation, *DIFF*, is 0.1435, suggesting firms' actual ratings tend to be more optimistic than the expected ratings. Finally, based on the IG^{+} variable, 5.34% of the firm-quarters have an actual rating of investment grade yet an expected rating of non-investment grade;

[14] In order to improve the stability of the coefficient estimates, I use a large sample of firms that have issued at least one quarterly earnings forecast during the sample period and that are rated B- or higher. Note that the latter imposed restriction is aimed to improve the precision of credit rating estimation and does not affect the size of the management earnings guidance sample.

similarly, based on the IG^- variable, 7.57% of the firm-quarters have an actual rating of non-investment grade yet an expected rating of investment grade.

[INSERT TABLE 3 HERE]

Since several independent variables are calculated based on the deviation between actual and expected ratings (i.e., *DIFF*, IG^+, and IG^-), I present the distribution of firm-quarters by the combinations of actual and expected ratings in Panel A of Table 3. The firm-quarters on the diagonal line have a credit rating consistent with the expected rating, and those above (below) the diagonal line have a credit rating more optimistic (pessimistic) than the expected rating. Panel B of Table 3 reports the frequency by the magnitude of rating deviations. Approximately 70% of firm-quarters have a rating deviation equal to or less than one notch and 89% of firm-quarters have a rating deviation equal to or less than two notches.

CHAPTER 4

EMPIRICAL RESEARCH DESIGN AND RESULTS

Management Earnings Guidance News and Future Credit Rating Changes

Profile analysis. I first conduct a profile analysis for three groups of firms: (1) firms whose credit ratings are downgraded, (2) firms whose credit ratings do not change, and (3) firms whose credit ratings are upgraded in the current or subsequent three quarters of guidance issuance. Specifically, for each group of firms, I calculate the mean guidance news (*MF_NEWS*, expressed as a percentage of stock price) as well as the mean changes in firm fundamentals prior to the guidance issuance.[15] Following prior studies (e.g., Kaplan and Urwitz 1979, Ziebart and Reiter 1992, Francis et al. 2005, Ashbaugh-Skaife et al. 2006, Barth et al. 2008, Cheng and Subramanyam 2008), I consider several financial risk measures, including return on assets (*ROA*), financial leverage (*LEV*), interest coverage (*ICOVER*), earnings volatility (*STD_ROA*), loss firm (*LOSS*), equity financing (ΔEQ), cash dividend payment (*DV*), abnormal stock return (*ARET*), market beta (*BETA*), stock return volatility (*STD_RET*), book-to-market ratio (*BTM*), and size (*MV*). I also consider several information environment measures, including analyst coverage (*NANALYST*), intensity of intangible assets (*INTAN*), absolute abnormal accruals ($|ABACC|$), and financial reporting transparency (*TRANSP*). Appendix A provides the variable definitions.

[INSERT TABLE 4 HERE]

[15] I measure the changes in firm fundamentals as the difference between quarter (q-1) and quarter (q-5), where q is earnings guidance quarter. To address the concern of stale information, I also measure the changes as the difference between quarter (q-1) and quarter (q-2), and find qualitatively similar results in the multivariate analyses.

Column 1 of Table 4 shows that credit rating downgrades are preceded by significantly negative earnings guidance news (mean = -0.2117, $p < 0.01$) as well as by deterioration in several financial risk and information environment proxies, with the exception of the decreased $|ABACC|$. Prior to downgrades, these firms' actual ratings tend to be more optimistic than the expected ratings, as evidenced by the significantly positive *DIFF* (mean = 0.6167, $p < 0.01$). Interestingly, analyst earnings forecast news orthogonal to management guidance news (*RAF_NEWS*, expressed as a percentage of stock price) is not significantly different from zero for downgraded firms.[16] By contrast, Column 3 of Table 4 shows that credit rating upgrades are preceded by significantly positive earnings guidance news (mean = 0.1403, $p < 0.05$) as well as by improvement in several financial risk and information environment proxies, with the exception of the increased *BETA*. Prior to upgrades, these firms' actual ratings tend to be overly pessimistic according to the significantly negative *DIFF* (mean = -0.9015, $p < 0.01$). In addition, analyst earnings forecast news orthogonal to management guidance news is significantly positive (mean = 0.0631, $p < 0.01$). Finally, Column 2 of Table 4 shows that firms without rating changes are associated with relatively more moderate, yet still statistically significant, positive earnings guidance news (mean = 0.0946, $p < 0.01$). Similarly, these firms are associated with more moderate changes in the financial risk and information environment proxies relative to firms with credit rating changes.

[INSERT FIGURE 1 HERE]

[16] Appendix C presents the model specification and estimation results for this variable.

Figure 1 provides additional descriptive evidence on the informativeness of guidance news about future credit rating changes. Specifically, for each of the four quarters leading up to the rating changes, I calculate the mean guidance news separately for downgraded and upgraded firms, where rating changes occur at the end of quarter q.[17] As a result, Figure 1 shows that downgrades are preceded by increasingly negative guidance news from quarters q-3 to q-1, while upgrades are preceded by moderately increasingly positive guidance news from quarters q-3 to q-1. Notably, the large negative guidance news in quarter q-1 appears to be a potentially useful signal of future downgrades.

Overall, the results of both Table 4 and Figure 1 are consistent with management guidance news, especially negative guidance news, being a leading indicator of future credit rating changes. The results of Table 4 also point out the importance of controlling for these firm fundamentals, as guidance news may be associated with many of them (e.g., McNichols 1989, Lang and Lundholm 2000, Rogers and Stocken 2005, Gong et al. 2009, Feng and Koch 2010, Lee et al. 2012).

Regression analysis. Prior literature finds that management guidance contains value-relevant information for both equity and debt investors (e.g., Patell 1976, Penman 1980, Waymire 1984, Shivakumar et al. 2011). However, given that corporate credit ratings are aimed to capture long-term and relative credit risk, the impact of short-term management guidance on such ratings is not immediately clear. To investigate this question, I first examine whether guidance news is associated with the likelihood of

[17] In order to track the earnings guidance news from the same firms over time, I consider only firms that had issued earnings guidance for all four quarters. Nevertheless, similar patterns can be observed when this restriction is removed.

future credit rating change, controlling for the deviation between actual and expected ratings as well as the changes in various firm fundamentals. Next, given the occurrence of credit rating changes, I examine whether guidance news is associated with the timeliness of such changes. Specifically, I estimate the following ordered logit (Poisson) regression for the likelihood (timeliness) of future credit rating changes:

$$\begin{aligned} \Delta CR_{i,q+\tau} \text{ (Month\_}\Delta CR\text{)} = {} & \alpha_0 + \alpha_1 \cdot MF\_NEWS_{i,q} + \alpha_2 \cdot DIFF_{i,q-1} + \alpha_3 \cdot RAF\_NEWS_{i,q} \\ & + \alpha_4 \cdot \Delta NANALYST_{i,q-1} + \alpha_5 \cdot \Delta ROA_{i,q-1} + \alpha_6 \cdot \Delta LEV_{i,q-1} \\ & + \alpha_7 \cdot \Delta ICOVER_{i,q-1} + \alpha_8 \cdot \Delta STD\_ROA_{i,q-1} + \alpha_9 \cdot \Delta LOSS_{i,q-1} \\ & + \alpha_{10} \cdot \Delta INTAN_{i,q-1} + \alpha_{11} \cdot \Delta\Delta EQ_{i,q-1} + \alpha_{12} \cdot \Delta DV_{i,q-1} \\ & + \alpha_{13} \cdot ARET_{i,q-1} + \alpha_{14} \cdot \Delta BETA_{i,q-1} + \alpha_{15} \cdot \Delta STD\_RET_{i,q-1} \\ & + \alpha_{16} \cdot \Delta BTM_{i,q-1} + \alpha_{17} \cdot \Delta MV_{i,q-1} + \alpha_{18} \cdot \Delta |ABACC_{i,q-1}| \\ & + \alpha_{19} \cdot \Delta TRANSP_{i,q-1} + Industry\ FE + Quarter\ FE + \varepsilon_{i,q+\tau} \end{aligned} \quad (1)$$

where the variables are defined as follows.

$\Delta CR_{i,q+\tau}$ = Change in credit rating over quarters [q, q+τ], τ = 0, 1, 2, or 3, where a positive (negative) change indicates credit rating upgrade (downgrade).

Month_ΔCR = Either *Month_DG* or *Month_UG*, where *Month_DG* is the number of months between management earnings guidance date and next credit rating downgrade, and *Month_UG* is the number of months between management earnings guidance date and next credit rating upgrade.

MF_NEWS = Management earnings guidance news, measured as management earnings guidance minus prior analyst consensus for the quarter, scaled by beginning stock price of the previous quarter. Prior analyst consensus is measured as the mean of one-quarter ahead analyst earnings forecasts issued during [-30,-2] of management guidance; if missing, prior analyst consensus is replaced by the conditional earnings expectation for the quarter (Rogers and Van Buskirk 2013).

DIFF = The difference between a firm's actual credit rating and expected credit rating at the beginning of guidance quarter (i.e., current rating - expected rating), where a positive (negative) difference suggests that actual rating is currently more optimistic (pessimistic) than the expected rating.

RAF_NEWS = Analyst earnings forecast news orthogonal to management earnings guidance news, measured as the residual term from estimating

Equation. (C.1).

NANALYST = Analyst coverage, measured as the natural log of the number of analysts following the firm during the quarter.

ROA = Return on assets, measured as income before extraordinary items divided by total assets at the end of the quarter.

LEV = Financial leverage, measured as long-term debt plus short-term debt, divided by total assets at the end of the quarter.

ICOVER = Interest coverage, measured as operating income before depreciation divided by interest expense for the quarter.

STD_ROA = Earnings volatility, measured as standard deviation of *ROA* over most recent 16 quarters, requiring at least 8 quarters with data available.

LOSS = An indicator variable set to one if income before extraordinary items is negative for the quarter, and zero otherwise.

INTAN = Intensity of intangibles, measured as research and development expense scaled by total assets at the end of the quarter.

ΔEQ = Equity financing, an indicator variable set to one if change in shareholder equity during the quarter is greater than zero, and zero otherwise.

DV = Cash dividend payment, an indicator variable set to one if the firm pays cash dividends during the quarter, and zero otherwise.

ARET = Abnormal stock return, measured as market-adjusted buy-and-hold return over the prior fiscal quarter.

BETA = Market beta, measured based on the market model using daily stock returns of the prior 4 quarters.

STD_RET = Return volatility, measured as standard deviation of monthly returns over the prior 4 quarters.

BTM = Book-to-market ratio, calculated as book value of common equity divided by market value of common equity at the end of the quarter.

MV = Firm size, measured as natural log of the market value of common equity at the end of the quarter.

$|ABACC|$ = Absolute value of abnormal accruals, measured as the residual term

from estimating the following cross-sectional Jones model (DeFond and Jiambalvo 1994) for each 2-digit SIC industry and quarter group, requiring at least 10 observations for each group: $TACC_{i,q}/TA_{i,q-1} = \alpha_0 \cdot (1/TA_{i,q-1}) + \alpha_1 \cdot (PPE_{i,q}/TA_{i,q-1}) + \alpha_2 \cdot (\Delta REV_{i,q}/TA_{i,q-1})$, where *TACC* is total accruals, measured as income before extraordinary items minus operating cash flows, *TA* is total assets, *PPE* is gross property, plant, and equipment, and ΔREV is change in sales revenue.

TRANSP = Financial reporting transparency, measured as negative one times the squared residual from estimating the following cross-sectional regression for each 2-digit SIC industry and quarter group, requiring at least 10 observations for each group: $ARET_{i,q} = \alpha_0 + \alpha_1 \cdot (IB_{i,q}/MV_{i,q-1}) + \alpha_2 \cdot (LOSS_{i,q}) + \alpha_3 \cdot (LOSS_{i,q}) * (IB_{i,q}/MV_{i,q-1}) + \alpha_4 \cdot \Delta(IB_{i,q}/MV_{i,q-1})$, where *IB* is income before extraordinary items and other variables are as defined above (Gu 2007).

Industry FE = Industry indicator variables based on 2-digit SIC industry group classification.

Quarter FE = Calendar quarter indicator variables.

For the test of ΔCR, if guidance news is incrementally informative about the occurrence of future credit rating changes, then I expect $\alpha_1 > 0$; for the test of *Month_ΔCR*, if guidance news is associated with the timeliness of future downgrades (upgrades), I expect $\alpha_1 > 0$ ($\alpha_1 < 0$) when *Month_DG* (*Month_UG*) is the dependent variable. Note that the coefficients are expected to have opposite signs for the test of *Month_UG*.

[INSERT TABLE 5 HERE]

Empirical results: likelihood of future credit rating changes. Table 5 presents the results from estimating Eq. (1). For all regressions in this study, continuous variables are winsorized at the top and bottom 1%, and the z-statistics or t-statistics reported in parentheses are based on standard errors clustered by firm and by quarter to address cross-sectional and time-series dependence (Gow et al. 2010). Focusing on the test of

ΔCR, I find that earnings guidance news, *MF_NEWS*, is significantly and positively associated with the credit rating changes in the three quarters following the guidance issuance (i.e., columns 2-4, respectively), but not in the guidance quarter (i.e., column 1).[18] Importantly, the economic significance of the *MF_NEWS* coefficient increases over time, consistent with CRAs gradually incorporating the guidance news into credit ratings.

Turning to the control variables, the significant and negative coefficient of *DIFF* in columns 1-4 suggests that firms' credit ratings tend to move toward the expected ratings. Consistent with the results of Ederington and Goh (1998), the significant and positive coefficient of *RAF_NEWS* in columns 2-4 suggests that residual analyst earnings forecast news is also informative about future credit rating changes. Among other control variables, change in financial leverage (*ΔLEV*), change in firm size (*ΔMV*), and prior abnormal stock return (*ARET*) appear to be the more important determinants of future credit rating changes.

Empirical results: timeliness of future credit rating changes. For the test of *Month_ΔCR*, I utilize a sample of firms with credit rating changes within two years.[19] I find that earnings guidance news, *MF_NEWS*, is significantly and positively associated with the timeliness of downgrades (coefficient = 0.0288, $p < 0.05$, in column 5), but not with the timeliness of upgrades (column 6). The significant and negative coefficient of

[18] The insignificant MF_NEWS coefficient reported in column 1 helps rule out the alternative explanation that such earnings news is driven by the contemporaneous credit rating change. At the same time, it raises questions about what information is conveyed through earnings guidance. In untabulated tests, I continue to find a significant MF_NEWS coefficient in columns 2-4, after controlling for (1) *ΔROA* and earnings surprises in the current and/or subsequent three quarters, and (2) stock market reaction around earnings guidance (i.e., *CAR[-1,+1]*) and buy-and-hold stock returns over the current and/or subsequent three quarters. These results suggest that management guidance contain information beyond the actual earnings news and contemporaneous stock return. I formally investigate this question in section 4.4.

[19] The inferences are similar if this restriction is removed.

DIFF in column 5 (coefficient = -0.0362, $p < 0.05$) indicates that the current rating optimism is associated timelier downgrades, whereas the significant and positive coefficient of *DIFF* in column 6 (coefficient = 0.0634, $p < 0.01$) indicates that the current rating pessimism is associated timelier upgrades.

Downward versus upward earnings guidance. The timeliness results reported in Table 5 suggest that negative guidance news may be more relevant than positive guidance news for CRAs' rating decisions. This is not unexpected, as prior literature indicates that negative earnings news is more relevant to debt market investors due to their asymmetric upside and downside risk exposures (Callen et al. 2009, Easton et al. 2009, Shivakumar et al. 2011, DeFond and Zhang 2014). In addition, downward guidance is generally viewed as more credible and useful by equity market investors and analysts (Cotter et al. 2006, Kothari et al. 2009, Feng and McVay 2010). To formally investigate this issue, I re-estimate Eq. (1) separately for the downward and upward earnings guidance samples.

[INSERT TABLE 6 HERE]

Panels A and B of Table 6 presents the results for the downward and upward guidance samples, respectively. I find that negative guidance news is significantly associated with both *ΔCR* and *Month_ΔCR* (more specifically *Month_DG*), while positive guidance news is not. That is, downward guidance is informative for both the likelihood and speed of future credit rating downgrades.[20] Such asymmetric results are consistent

[20] The fact that credit ratings are sticky, as well as the result in Figure 1 that rating downgrades are preceded by large negative guidance news, suggests a nonlinear relation between earnings guidance news and future credit rating changes. To examine this potential nonlinear effect, I focus on $\Delta CR_{i,q+3}$ and modify

with CRAs perceiving downward guidance to be more relevant than upward guidance for their rating decisions. Due to the generally insignificant results for the upward guidance sample, I will focus my subsequent analyses and discussions on the downward guidance sample.

Relevance of Management Earnings Guidance News Conditional on the Deviation between Actual and Expected Ratings

Magnitude of the deviation between actual and expected ratings. Next, I examine whether the magnitude of the deviation between a firm's actual and expected credit ratings affects the association between earnings guidance news and future credit rating changes. Regarding downward guidance, it may be especially relevant for CRAs' decisions to downgrade a firm when the current rating appears to be overly optimistic. To test this conjecture, I specify the following ordered logit (Poisson) regression for the likelihood (timeliness) of future credit rating changes:

$$
\begin{aligned}
\Delta CR_{i,q+\tau} \quad (Month\_DG) \;=\; & \alpha_0 + \alpha_1 \cdot MF\_NEWS_{i,q} + \alpha_2 \cdot DIFF_{i,q-1} \\
& + \alpha_3 \cdot MF\_NEWS_{i,q} * DIFF_{i,q-1} + \alpha_4 \cdot IG^{+}_{i,q-1} \\
& + \alpha_5 \cdot MF\_NEWS_{i,q} * IG^{+}_{i,q-1} + \alpha_6 \cdot IG^{-}_{i,q-1} \\
& + \alpha_7 \cdot MF\_NEWS_{i,q} * IG^{-}_{i,q-1} + \alpha_8 \cdot RAF\_NEWS_{i,q} \\
& + \alpha_9 \cdot \Delta NANALYST_{i,q-1} + \alpha_{10} \cdot \Delta ROA_{i,q-1} + \alpha_{11} \cdot \Delta LEV_{i,q-1} \\
& + \alpha_{12} \cdot \Delta ICOVER_{i,q-1} + \alpha_{13} \cdot \Delta STD\_ROA_{i,q-1} + \alpha_{14} \cdot \Delta LOSS_{i,q-1} \\
& + \alpha_{15} \cdot \Delta INTAN_{i,q-1} + \alpha_{16} \cdot \Delta\Delta EQ_{i,q-1} + \alpha_{17} \cdot \Delta DV_{i,q-1} \\
& + \alpha_{18} \cdot ARET_{i,q-1} + \alpha_{19} \cdot \Delta BETA_{i,q-1} + \alpha_{20} \cdot \Delta STD\_RET_{i,q-1} \\
& + \alpha_{21} \cdot \Delta BTM_{i,q-1} + \alpha_{22} \cdot \Delta MV_{i,q-1} + \alpha_{23} \cdot \Delta|ABACC_{i,q-1}| \\
& + \alpha_{24} \cdot \Delta TRANSP_{i,q-1} + Industry\ FE + Quarter\ FE + \varepsilon_{i,q+\tau} \qquad (2)
\end{aligned}
$$

Where the variables not previously defined are as follows.

Eq. (1) by including a *LARGE_MF_NEWS* variable to the model, which is an indicator variable set equal to 1 when the absolute magnitude of earnings guidance news is greater than the sample median. As a result, for the downward guidance sample, both the statistical and economic significance of *MF_NEWS* are weakened (coefficient = 0.1015, $p < 0.1$), and the *LARGE_MF_NEWS* indicator is significant and negative (coefficient = -0.4270, $p < 0.05$). By contrast, both *MF_NEWS* and *LARGE_MF_NEWS* are statistically insignificant for the upward guidance sample.

IG^+ = An indicator set equal to one if the firm's actual credit rating is investment grade while the expected credit rating is non-investment grade (i.e., current rating is more optimistic than the expected rating and the two ratings straddle the investment grade cutoff), and zero otherwise.

IG^- = An indicator set equal to one if the firm's current credit rating is non-investment grade while the expected credit rating is investment grade (i.e., current rating is more pessimistic than the expected rating and the two ratings straddle the investment grade cutoff), and zero otherwise.

I expect that downward guidance has a stronger association with both the likelihood and timeliness of future credit rating changes when a firm's current credit rating is more optimistic than the expected rating ($\alpha_3 > 0$) and, especially, when the two ratings straddle the investment-grade cutoff ($\alpha_5 > 0$).

[INSERT TABLE 7 HERE]

Table 7 presents the results for the downward guidance sample. Focusing on the test of *ΔCR*, I find that the coefficient of *MF_NEWS * DIFF* is significant and positive in columns 2-4 and that the coefficient of *MF_NEWS * IG^+* is also significant and positive in columns 2-3. These results suggest that downward guidance is especially informative about the occurrence of future credit rating downgrades when a firm's current rating is overly optimistic. Turning to the result of *Month_DG* in column 5, I find that the coefficients of both *MF_NEWS * DIFF* and *MF_NEWS * IG^+* are significant and positive, corroborating the results of *ΔCR*. Interestingly, the main effect of *MF_NEWS* is no longer significant.[21] Overall, downward guidance appears to be especially relevant for CRAs'

[21] This result implies that, when the current credit rating is consistent with the expected rating, CRAs may not incorporate negative guidance news into credit ratings until more clarifying information becomes available. Consequently, the magnitude of negative guidance news is associated with the likelihood but not with the timeliness of future downgrades.

rating decisions when it sends out a signal that is inconsistent with the current rating optimism.

Persistence of the deviation between actual and expected ratings. Further, the interaction effect between *MF_NEWS* and *DIFF* on future credit rating changes may depend on the persistence of the rating deviation, defined as the time elapsed since the initial rating deviation had took place. In particular, if a firm's rating deviation has been sustained for a long period of time, chances are that the model predicted rating is imprecise due to the omission of important information or that CRAs have strong incentives to maintain an optimistic credit opinion for the client. In either case, short-term earnings guidance is not likely to prompt CRAs to change the current rating toward the expected rating. As such, I expect the interaction effect between *MF_NEWS* and *DIFF* to be weaker for more persistent rating deviations.

[INSERT TABLE 8 HERE]

To test this conjecture, I re-estimate Eq. (2), excluding observations with a rating deviation for more than 5, 4, 3, 2, or 1 year, respectively. For the tests of both *ΔCR* and *Month_DG*, I find that the coefficient estimate of *MF_NEWS * DIFF* increases monotonically as more persistent rating deviations are excluded. For brevity, I only report the results of excluding observations with a rating deviation for more than 5 years (columns 2 and 5) or 1 year (columns 3 and 6), respectively. Overall, the results presented in Table 8 suggest that the deviation between actual and expected ratings is especially likely to affect CRAs' incorporation of negative guidance news when such a rating deviation has occurred relatively recently.

Relevance of Management Earnings Guidance News Conditional on the Relevance or Reliability of Alternative Information Sources

While the results so far are consistent with CRAs incorporating negative earnings guidance news into their rating decisions, the relevance of earnings guidance for credit risk evaluation could depend on alternative, competing information sources. Specifically, downward guidance is likely to be more relevant when alternative information sources have become less useful. To test this hypothesis, I interact *MF_NEWS* with three measures that proxy for the change in relevance or reliability of alternative information sources (i.e., financial statements and financial analyst research) in assessing a firm's future cash flows and credit risk. I expect downward earnings guidance to be more (less) relevant following a decrease (increase) in the reliability or reliability of an alternative source. Specifically, I estimate the following ordered logit (Poisson) regression for the likelihood (timeliness) of future credit rating changes:[22]

$$\begin{aligned} \Delta CR_{i,q+3} \\ (Month\_\Delta CR) \quad = \; & \alpha_0 + \alpha_1 \cdot MF\_NEWS_{i,q} + \alpha_2 \cdot \Delta ALT\_SRCS_{i,q-1} \\ & + \alpha_3 \cdot MF\_NEWS_{i,q} * \Delta ALT\_SRCS_{i,q-1} + \alpha_4 \cdot DIFF_{i,q-1} \\ & + \alpha_5 \cdot RAF\_NEWS_{i,q} + \alpha_6 \cdot \Delta NANALYST_{i,q-1} + \alpha_7 \cdot \Delta ROA_{i,q-1} \\ & + \alpha_8 \cdot \Delta LEV_{i,q-1} + \alpha_9 \cdot \Delta ICOVER_{i,q-1} + \alpha_{10} \cdot \Delta STD\_ROA_{i,q-1} \\ & + \alpha_{11} \cdot \Delta LOSS_{i,q-1} + \alpha_{12} \cdot \Delta INTAN_{i,q-1} + \alpha_{13} \cdot \Delta\Delta EQ_{i,q-1} \\ & + \alpha_{14} \cdot \Delta DV_{i,q-1} + \alpha_{15} \cdot ARET_{i,q-1} + \alpha_{16} \cdot \Delta BETA_{i,q-1} \\ & + \alpha_{17} \cdot \Delta STD\_RET_{i,q-1} + \alpha_{18} \cdot \Delta BTM_{i,q-1} + \alpha_{19} \cdot \Delta MV_{i,q-1} \\ & + \alpha_{20} \cdot \Delta|ABACC_{i,q-1}| + \alpha_{21} \cdot \Delta TRANSP_{i,q-1} + Industry\ FE \\ & + Quarter\ FE + \varepsilon_{i,q+3} \end{aligned} \tag{3}$$

, where *ΔALT_SRCS* denotes (-1) * *ΔTRANSP*, *ΔINTAN*, or (-1) * *ΔNANALYST*. As previously defined, *TRANSP* represents financial reporting transparency and is measured as negative one times the squared residual from regressing returns on earnings and

[22] For brevity, I only report the results for credit rating changes over quarters [q, q+3]. However, the inferences are similar when credit rating change is measured over quarters [q, q+2] (i.e., $\Delta CR_{i,q+2}$).

change in earnings, allowing for different intercepts and slopes for profit and loss firms (Ashbaugh-Skaife et al. 2006, Gu 2007, Cheng and Subramanyam 2008, Barth et al. 2013); *INTAN* represents the intensity of intangible assets, and *NANALYST* represents equity analyst coverage. Note that *ΔTRANSP* and *ΔNANALYST* are multiplied by negative one so that positive values suggest decreased reliability of financial reports and analyst consensus, respectively, for credit risk evaluation.

[INSERT TABLE 9 HERE]

Change in financial reporting transparency. Empirically, the *TRANSP* measure is aimed to capture both the timeliness of a firm's financial information and the relevance of financial information for assessing the firm's current economic conditions (Ashbaugh-Skaife et al. 2006). As such, if a firm's financial reporting transparency decreases, historical accounting information would be less useful for credit risk assessment, and CRAs may be prompted to place more weight on downward earnings guidance. Therefore, I expect the association between downward guidance and future credit rating changes to be *inversely* related to the change in financial reporting transparency ($\alpha_3 > 0$, by construction of the corresponding *ΔALT_SRCS* variable).

Columns 1 and 4 of Table 9 present the results for the downward guidance sample. As expected, I find the coefficient of *MF_NEWS* * *ΔALT_SRCS* to be significant and positive in both column 1 ($\alpha_3 = 0.5156$, $p < 0.01$) and column 4 ($\alpha_3 = 0.2491$, $p < 0.01$). These results suggest that, following a decrease in the firm's financial reporting

transparency, downward earnings guidance is more relevant for CRAs' decisions to downgrade a firm.[23]

Change in intensity of intangibles. Next, I investigate whether the change in a firm's intangible intensity, *ΔINTAN*, moderates the association between downward earnings guidance and future credit rating changes. Prior literature points out financial statements' inability to communicate the value of investments in intangible assets and argues that more disclosure can help resolve the information asymmetry (Lev 2003, Merkley 2014). As such, CRAs' weighting of earnings guidance could depend on a firm's intangible intensity. I expect the association between of downward guidance and future credit rating changes to be *positively* related to the change in a firm's intangible intensity ($\alpha_3 > 0$).

Columns 2 and 5 of Table 9 present the results for the downward guidance sample. As expected, I find the coefficient of *MF_NEWS * ΔALT_SRCS* to be significant and positive in both column 2 ($\alpha_3 = 13.9091$, $p < 0.01$) and column 5 ($\alpha_3 = 1.5040$, $p < 0.1$). These results are consistent with CRAs placing more weight on downward guidance when a firm's intangible intensity and the perceived uncertainty about future cash flows increase.[24]

Change in analyst coverage. Finally, I investigate whether the change in a firm's analyst coverage, *ΔNANALYST*, moderates the association between downward earnings guidance and future credit rating changes. Suppose analyst coverage is associated with

[23] Similar inference can be made when *ΔTRANSP* is replaced by *TRANSP* (i.e., the level specification). Nevertheless, the change specification is potentially more interesting because it jointly examines whether CRAs dynamically adjust the weights placed on different information sources.

[24] Similar inference can be made when *ΔINTAN* is replaced by *INTAN* in the empirical analysis.

both the availability of analyst research and the reliability of analyst consensus, a change in analyst coverage could affect the usefulness of analyst research in evaluating a firm's credit risk. As a response to such a change, CRAs are likely to adjust the weight placed on management guidance. I therefore expect the association between of downward guidance and future credit rating changes to be *inversely* related to the change in analyst coverage ($\alpha_3 > 0$, by construction of the corresponding *ΔALT_SRCS* variable).

Columns 3 and 6 of Table 9 present the results for the downward guidance sample. I find the coefficient of *MF_NEWS* * *ΔALT_SRCS* to be significant and positive in column 3 ($\alpha_3 = 0.2447$, $p < 0.05$), but statistically insignificant in column 6. The former result is consistent with CRAs placing more weight on downward guidance when the information asymmetry increases due to a drop in analyst coverage.

Management Earnings Guidance News and Future Cash Flows Properties

While the significant equity and debt market reactions to management guidance news suggest that management guidance contains relevant information about a firm's future cash flows and credit risk, it is not clear what kind of cash flows information is conveyed through management guidance. To further support the relevance of management guidance for credit rating analysis, I specify the following OLS regression to examine the relations between guidance news and two future cash flows properties, specifically the level and the volatility of future cash flows:

$$
\begin{aligned}
CFO_{i,[q,\,q+3]} = \; & \alpha_0 + \alpha_1 \cdot MF\_NEWS_{i,q} + \alpha_2 \cdot CFO_{i,[q-4,\,q-1]} + \alpha_3 \cdot DIFF_{i,q-1} \\
& + \alpha_4 \cdot RAF\_NEWS_{i,q} + \alpha_4 \cdot CFO_{i,[q-4,\,q-1]} \\
& + \alpha_5 \cdot \Delta NANALYST_{i,q-1} + \alpha_6 \cdot \Delta ROA_{i,q-1} + \alpha_7 \cdot \Delta LEV_{i,q-1} \\
& + \alpha_8 \cdot \Delta ICOVER_{i,q-1} + \alpha_9 \cdot \Delta STD\_ROA_{i,q-1} + \alpha_{10} \cdot \Delta LOSS_{i,q-1} \\
& + \alpha_{11} \cdot \Delta INTAN_{i,q-1} + \alpha_{12} \cdot \Delta \Delta EQ_{i,q-1} + \alpha_{13} \cdot \Delta DV_{i,q-1} \\
& + \alpha_{14} \cdot ARET_{i,q-1} + \alpha_{15} \cdot \Delta BETA_{i,q-1} + \alpha_{16} \cdot \Delta STD\_RET_{i,q-1} \\
& + \alpha_{17} \cdot \Delta BTM_{i,q-1} + \alpha_{18} \cdot \Delta MV_{i,q-1} + \alpha_{19} \cdot \Delta |ABACC_{i,q-1}| \\
& + \alpha_{20} \cdot \Delta TRANSP_{i,q-1} + Industry\ FE + Quarter\ FE + \varepsilon_i
\end{aligned} \tag{4}
$$

Where $CFO_{i,[q,\,q+3]}$ denotes either $AVG\_CFO_{i,[q,\,q+3]}$ or $STD\_CFO_{i,[q,\,q+3]}$, as defined below.

$AVG\_CFO_{i,[q,\,q+3]}$ = The level of future cash flows, measured as the mean of (operating cash flows/beginning total assets) over quarters [q, q+3].

$STD\_CFO_{i,[q,\,q+3]}$ = The volatility of future cash flows, measured as |standard deviation of operating cash flows/mean of operating cash flows| over quarters [q, q+3], where operating cash flows are scaled by beginning total assets.

If management guidance is informative about future cash flows beyond the guidance quarter, I expect guidance news to be positively associated with the level of future cash flows ($\alpha_1 > 0$) and/or negatively associated with the volatility of future cash flows ($\alpha_1 < 0$).

[INSERT TABLE 10 HERE]

Table 10 presents the results for the downward guidance sample (columns 1-2) and the upward guidance sample (columns 3-4), respectively. Focusing on the downward guidance sample, I find that the coefficient of *MF_NEWS* is significantly positive in column 1 ($\alpha_1 = 0.0009$, $p < 0.05$) and significantly negative in column 2 ($\alpha_1 = -0.0917$, $p < 0.1$), indicating that downward guidance is associated with lower future cash flows as well as a higher volatility of future cash flows. These results also suggest that the information content of downward guidance about future cash flows extends beyond the

guidance quarter. Perhaps surprisingly, I do not find a statistically significant association between upward guidance and future cash flows properties. In sum, these asymmetric results offer some explanation as to why downward guidance is more informative than upward guidance about future CRA actions.

Turning to the control variables, I find that the deviation between actual and expected ratings, *DIFF*, is positively associated with the level of future cash flows ($p < 0.01$ in both columns 1 and 3), and is negatively associated with the volatility of future cash flows ($p < 0.1$ in column 4). Despite investors' concerns about biased credit ratings, these results are consistent with CRAs' focus on the long-term credit quality. I also find some evidence that residual analyst earnings forecast news, *RAF_NEWS*, is significantly and negatively associated with the volatility of future cash flows ($\alpha_4 = -0.7993$ and $p < 0.05$ in column 4).

CHAPTER 5

ADDITIONAL ANALYSES

Credit Rating Characteristics and the Relevance of Management Earnings Guidance

In this section, I examine whether certain credit rating characteristics moderate the association between negative earnings guidance news and future credit rating changes. First, I consider the impact of a firm's current credit rating level because lower ratings are known to be less stable and are presumably more sensitive to negative guidance news (Standard & Poor's 2012c). Empirically, I focus on credit rating changes in the current and subsequent three quarters of management guidance (i.e., ΔCR_{q+3}), and modify Eq. (1) by including *CR_LEVEL* and the interaction between *MF_NEWS* and *CR_LEVEL* in the model, where *CR_LEVEL* is the credit rating level at the beginning of the guidance quarter.[25] In the untabulated result, I find a significant and positive main effect of *MF_NEWS* (coefficient = 0.4653, $p < 0.01$) and a significant and negative interaction effect of *MF_NEWS* and *CR_LEVEL* (coefficient = -0.1225, $p < 0.1$) for the downward earnings guidance sample. This result suggests downward guidance is more relevant for lower credit ratings.

Next, I examine the impact of negative earnings guidance news on initial versus non-initial credit ratings. By initial credit rating, I refer to the first credit rating assigned to a firm by a CRA. Such a rating is usually determined by a comprehensive rating process, in which credit analysts conduct a thorough credit risk evaluation and frequently meet with the issuer's management to obtain additional information. As a result, initial

[25] Specifically, I code the AAA and AA rating categories as 5, the A rating category as 4, …, and the B rating category as 1.

credit ratings are likely to be less sensitive to the subsequent short-term earnings guidance news. To test this, I focus on ΔCR_{q+3} and modify Eq. (1) by including *INITIAL_CR* and the interaction between *MF_NEWS* and *INITIAL_CR* in the model. In the untabulated result, I find a significant and positive main effect of *MF_NEWS* (coefficient = 0.1846, $p < 0.01$) but an insignificant interaction effect of *MF_NEWS* and *INITIAL_CR* (coefficient = -0.0956, $p > 0.1$) for the downward guidance sample. However, the result of the F-test indicates that the sum of the above coefficients is not significantly different from zero, providing some evidence that downward guidance is less relevant for initial credit ratings.

Prior Guidance Characteristics and the Relevance of Management Earnings Guidance

In this section, I examine whether managers' prior guidance behavior affects CRAs' incorporation of negative earnings guidance news into credit ratings. I first consider the impact of managers' prior guidance frequency. On one hand, greater guidance frequency implies greater guidance credibility due to more transparent disclosure policies; on the other hand, greater guidance frequency suggests lower relevance of management guidance due to the richer information environment and thus a greater reliability of alternative information sources. As such, whether prior guidance frequency moderates the association between negative earnings guidance news and future credit rating changes is an empirical question. Empirically, I again focus on ΔCR_{q+3} and modify Eq. (1) by including *PRIOR_FREQ* and the interaction between *MF_NEWS* and *PRIOR_FREQ* in the model, where *PRIOR_FREQ* is the number of quarters that a firm issued any form of management guidance in the prior year. In the untabulated result, I

find a significant and positive main effect of *MF_NEWS* (coefficient = 0.4224, $p < 0.01$) and a significant and negative interaction effect of *MF_NEWS* and *PRIOR_FREQ* (coefficient = -0.0767, $p < 0.1$) for the downward guidance sample. This result suggests occasional downward guidance is relatively more informative about future credit rating changes.

Next, I examine whether CRAs' incorporation of negative earnings guidance news depends on a firm's prior guidance accuracy, a proxy for the current guidance quality. Focusing on ΔCR_{q+3}, I modify Eq. (1) by including *PRIOR_ACCY* and the interaction between *MF_NEWS* and *PRIOR_ACCY* in the model, where *PRIOR_ACCY* is the decile ranking of negative one times the mean of absolute price-deflated management forecast errors in the prior year, scaled to range from 0 to 1.[26] In the untabulated result, I find an insignificant main effect of *MF_NEWS* (coefficient = 0.1152, $p > 0.1$) and a significant and positive interaction effect of *MF_NEWS* and *PRIOR_ACCY* (coefficient = 1.2006, $p < 0.05$) for the downward guidance sample. This result suggests ex-ante more accurate downward guidance is more informative about future credit rating changes.

Relevance of Management Earnings Guidance during the Recent Credit Crisis

Prior literature documents that management earnings guidance are perceived to be more relevant by the CDS market investors during the recent credit crisis period relative to the pre-crisis period (Shivakumar et al. 2011). Observing the unusually high market-wide credit risk during the crisis period, CRAs may as well consider the voluntarily earnings disclosure a more relevant information source of a firm's credit risk. To test this, I focus on ΔCR_{q+3} as before and modify Eq. (1) by including *CRISIS* and the interaction

[26] The result is qualitatively similar when the untransformed measure is used.

between *MF_NEWS* and *CRISIS* in the model, where *CRISIS* is an indicator variable set equal to one if the management earnings guidance is issued during July 2007 and June 2009, and zero otherwise. In the untabulated result, I find a significant and positive main effect of *MF_NEWS* (coefficient = 0.1378, $p < 0.01$) as well as a significant interaction effect of *MF_NEWS* and *CRISIS* (coefficient = 0.3944, $p < 0.05$) for the downward guidance sample. This result suggests that downward earnings guidance is even more relevant for credit ratings when the market-wide credit risk is high.

Annual Earnings Guidance News and Future Credit Rating Changes

Given that corporate credit ratings are designed to capture long-term credit quality, natural questions are whether managers' annual earnings guidance is also informative and whether annual earnings guidance is more informative than quarterly earnings guidance about future credit rating changes. While the longer forecast horizon of annual earnings guidance may support these conjectures, other characteristics of annual earnings guidance are likely to work against them. For instance, prior literature shows that managers' annual guidance is less accurate than their quarterly guidance (Hirst et al. 2008); in addition, relative to quarterly guidance for which there is nearer-term accountability, the longer forecast horizon of annual guidance provides greater room for managers' strategic forecasting behavior.

To investigate these questions, I repeat the main analyses with the annual earnings guidance data. As with quarterly guidance, I find that downward annual guidance news is significantly and positively associated with both the occurrence and speed of credit rating downgrades in the year following the guidance issuance (untabulated). In the cross-sectional analyses, I find that downward annual guidance news is even more informative

when a firm's current rating is too optimistic relative to the expected rating and when its financial reporting has become less transparent. Nevertheless, relative to the results of quarterly guidance, the statistical significance of the *MF_NEWS* main effect is weaker in some cases, suggesting that quarterly guidance on average may be more informative than annual guidance about future rating downgrades.

CHAPTER 6

CONCLUSION

While CRAs claim to use both forward-looking and historical information in evaluating a firm's credit risk, the role of forward-looking information in their rating decisions is not well understood. In this study, I examine the association between management earnings guidance news and future credit rating changes. I find that negative guidance news is associated with both the likelihood and timeliness of future credit rating downgrades, especially when (i) a firm's actual rating is more optimistic than the expected rating, (ii) such a rating deviation has occurred relatively recently, and (iii) the relevance or reliability of alternative information sources is lower. In addition, the association between earnings guidance news and credit rating changes is moderated by several credit rating and prior guidance characteristics, as well as by market-wide credit risk. Finally, I document that negative guidance news is associated with lower future cash flows and a higher volatility of future cash flows.

The findings of this study make several contributions to the literature. First, I provide systematic evidence consistent with CRAs incorporating downward earnings guidance into their rating decisions. To the best of my knowledge, this is the first study to document the association between voluntarily disclosed forward-looking information and future CRA actions. Second, these findings have implications for practitioners, especially credit rating users. In particular, credit rating users may use downward guidance to better predict future credit rating downgrades; in this regard, the results of the cross-sectional analyses would be especially useful. Finally, the findings suggest that managers' downward guidance may have negative credit rating consequences. Therefore, when

considering using downward guidance to manage market expectation or litigation risk, managers should also take into account the potential credit rating impact of their voluntary bad news disclosures.

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APPENDIX A

VARIABLE DEFINITIONS

CR_{q-1}	S&P's long-term issuer credit rating measured at the beginning of management earnings guidance quarter, where AAA is coded as 16, AA+ is coded as 15, …, and B- is coded as 1.
$\Delta CR_{q+\tau}$	Change in credit rating over quarters [q, q+τ], τ = 0, 1, 2, or 3, where a positive (negative) change indicates credit rating upgrade (downgrade).
Month_ΔCR	Either *Month_DG* or *Month_UG*, where *Month_DG* is the number of months between management earnings guidance date and next credit rating downgrade, and *Month_UG* is the number of months between management earnings guidance date and next credit rating upgrade.
MF_NEWS	Management earnings guidance news, measured as management earnings guidance minus prior analyst consensus for the quarter, scaled by beginning stock price of the previous quarter. Prior analyst consensus is measured as the mean of one-quarter ahead analyst earnings forecasts issued during [-30,-2] of management guidance; if missing, prior analyst consensus is replaced by the conditional earnings expectation for the quarter (Rogers and Van Buskirk 2013).
DIFF	The difference between a firm's actual credit rating and expected credit rating at the end of the quarter (i.e., current rating - expected rating), where a positive (negative) difference suggests that actual rating is more optimistic (pessimistic) than the expected rating. See Appendix B for details about the estimation of expected ratings.
RAF_NEWS	Analyst earnings forecast news orthogonal to management earnings guidance news, measured as the residual term from estimating Equation (C.1). See Appendix C for details about the estimation of this variable.
NANALYST	Analyst coverage, measured as the natural log of the number of analysts following the firm during the quarter.
ROA	Return on assets, measured as income before extraordinary items divided by total assets at the end of the quarter.
LEV	Financial leverage, measured as long-term debt plus short-term debt, divided by total assets at the end of the quarter.
ICOVER	Interest coverage, measured as operating income before depreciation divided by interest expense for the quarter.
STD_ROA	Earnings volatility, measured as standard deviation of *ROA* over most recent 16 quarters, requiring at least 8 quarters with data available.
LOSS	An indicator variable set to one if income before extraordinary items is negative for the quarter, and zero otherwise.
INTAN	Intensity of intangibles, measured as research and development expense scaled by total assets at the end of the quarter.
ΔEQ	Equity financing, an indicator variable set to one if change in shareholder equity during the quarter is greater than zero, and zero otherwise.

DV	Cash dividend payment, an indicator variable set to one if the firm pays cash dividends during the quarter, and zero otherwise.
ARET	Abnormal stock return, measured as market-adjusted buy-and-hold abnormal return over the prior fiscal quarter.
BETA	Market beta, measured based on the market model using daily stock returns of the prior 4 quarters.
STD_RET	Return volatility, measured as standard deviation of monthly returns over the prior 4 quarters.
BTM	Book-to-market ratio, calculated as book value of common equity divided by market value of common equity at the end of the quarter.
MV	Firm size, measured as natural log of the market value of common equity at the end of the quarter.
$\|ABACC\|$	Absolute value of abnormal accruals, measured as the residual term from estimating the following cross-sectional Jones model for each 2-digit SIC industry and quarter group, requiring at least 10 observations for each group: $TACC_{i,q}/TA_{i,q-1} = \alpha_0 \cdot (1/TA_{i,q-1}) + \alpha_1 \cdot (PPE_{i,q}/TA_{i,q-1}) + \alpha_2 \cdot (\Delta REV_{i,q}/TA_{i,q-1})$, where *TACC* = total accruals, measured as income before extraordinary items minus operating cash flows, *TA* = total assets, *PPE* = gross property, plant, and equipment, and ΔREV = change in sales revenue.
TRANSP	Financial reporting transparency, measured as negative one times the squared residual from estimating the following cross-sectional regression for each 2-digit SIC industry and quarter group, requiring at least 10 observations for each group: $ARET_{i,q} = \alpha_0 + \alpha_1 \cdot (IB_{i,q}/MV_{i,q-1}) + \alpha_2 \cdot (LOSS_{i,q}) + \alpha_3 \cdot (LOSS_{i,q}) * (IB_{i,q}/MV_{i,q-1}) + \alpha_4 \cdot \Delta(IB_{i,q}/MV_{i,q-1})$, where *ARET* = the market adjusted return over the fiscal quarter, *IB* = income before extraordinary items, *MV* = market value of equity, *LOSS* = an indicator set to one if *IB* is negative, and zero otherwise (Gu 2007).
IG^+	An indicator set equal to one if the firm's actual credit rating is investment grade while the expected credit rating is non-investment grade (i.e., current rating is more optimistic than the expected rating *and* the two ratings straddle the investment grade cutoff), and zero otherwise.
IG^-	An indicator set equal to one if the firm's current credit rating is non-investment grade while the expected credit rating is investment grade (i.e., current rating is more pessimistic than the expected rating *and* the two ratings straddle the investment grade cutoff), and zero otherwise.
AVG_CFO	Level of future cash flows, measured as the mean of operating cash flows scaled by beginning total assets over quarters [q, q+3].
STD_CFO	Volatility of future cash flows, measured as |standard deviation of operating cash flows/mean of operating cash flows| over quarters [q, q+3], where operating cash flows are scaled by beginning total assets.

APPENDIX B

ESTIMATING EXPECTED CREDIT RATINGS

$$
\begin{aligned}
CR_{i,q} \;=\; & \alpha_0 + \alpha_1 \cdot NANALYST_{i,q} + \alpha_2 \cdot ROA_{i,q} + \alpha_3 \cdot LEV_{i,q} + \alpha_4 \cdot ICOVER_{i,q} \\
& + \alpha_5 \cdot STD\_ROA_{i,q} + \alpha_6 \cdot LOSS_{i,q} + \alpha_7 \cdot INTAN_{i,q} + \alpha_8 \cdot \Delta EQ_{i,q} + \alpha_9 \cdot DV_{i,q} \\
& + \alpha_{10} \cdot PRICE_{i,q} + \alpha_{11} \cdot BETA_{i,q} + \alpha_{12} \cdot STD\_RET_{i,q} + \alpha_{13} \cdot BTM_{i,q} \\
& + \alpha_{14} \cdot MV_{i,q} + \alpha_{15} \cdot |ABACC_{i,q}| + \alpha_{16} \cdot TRANSP_{i,q} + Industry\ FE \\
& + Quarter\ FE + \varepsilon_{i,q}
\end{aligned} \tag{B.1}
$$

Dep. Var. =		*CR*	
	Pred. Sign	Coeff.	z-stat
NANALYST	+	0.0210	1.63
ROA	+	1.8634	0.61
LEV	-	-3.6665***	-8.30
ICOVER	+	-0.0002	-0.40
STD_ROA	-	-3.8878**	-2.40
LOSS	-	-1.6688***	-8.22
INTAN	?	-18.7688**	-2.11
ΔEQ	?	-0.0907	-0.75
DV	?	1.3006***	10.35
PRICE	?	0.0042	1.21
BETA	-	-0.7088***	-6.76
STD_RET	-	-5.4827***	-6.04
BTM	?	0.1970*	1.67
MV	+	1.2482***	17.19
|ABACC|	-	-8.3273***	-2.68
TRANSP	+	1.1039***	3.74
Intercept		Included	
Industry & Quarter FE		Included	
N		23,710	
Pseudo R^2		0.291	

Table notes: This table presents the results from estimating the ordered logit regression of Equation (B.1) to generate expected credit ratings. *CR* = S&P's long-term issuer credit rating measured at the end of the quarter, where AAA is coded as 16, AA+ is coded as 15, …, and B- is coded as 1. *NANALYST* = the natural log of the number of analysts following the firm. *ROA* = income before extraordinary items divided by total assets. *LEV* = long-term debt plus short-term debt, divided by total assets. *ICOVER* = operating income before depreciation divided by interest expense. *STD_ROA* = earnings volatility, measured as standard deviation of *ROA* over most recent 16 quarters, requiring at least 8 quarters with data available. *LOSS* = an indicator variable set equal to one if income before extraordinary items is negative for the quarter, and zero otherwise. *INTAN* = intensity of intangibles, measured as research and development expense scaled by total assets. *ΔEQ* = an indicator variable set equal to one if change in shareholder equity during the quarter is greater than zero, and zero otherwise. *DV* = an indicator variable set equal to one if the firm pays cash dividends during the quarter, and zero otherwise. *PRICE* = average monthly closing stock price per share over the prior four quarters. *BETA* = market beta, measured based on the market model using daily stock returns of the prior four quarters. *STD_RET* = standard deviation of monthly returns over the prior four quarters. *BTM* = book value of common equity divided by market value of common equity at the end of the quarter. *MV* = natural log of the market value of common equity at the end of the quarter. *|ABACC|* = absolute value of abnormal accruals, see Appendix A for detailed definition. *TRANSP* = financial reporting transparency, see Appendix A for detailed definition. All accounting-based variables as well as the number of analysts following are measured as the mean of the most recent four quarters. z-statistics are based on standard errors clustered by firm and by quarter. *, **, ***, indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

APPENDIX C

ESTIMATING RESIDUAL ANALYST FORECAST NEWS

$$AF\_NEWS_{i,q} = \alpha_0 + \alpha_1 \cdot MF\_NEWS_{i,q} + \alpha_2 \cdot MF\_NEWS_{i,q} * DOWN_{i,q} + \alpha_3 \cdot MF\_NEWS_{i,q} * ACCURACY_{i,q} + \alpha_4 \cdot MF\_NEWS_{i,q} * AGREE_{i,q} + \alpha_5 \cdot MF\_NEWS_{i,q} * HORIZON_{i,q} + \alpha_6 \cdot MF\_NEWS_{i,q} * RANGE_{i,q} + \alpha_7 \cdot MF\_NEWS_{i,q} * NANALYST_{i,q} + Main\ Effects + Industry\ FE + Quarter\ FE + \varepsilon_{i,q} \quad (C.1)$$

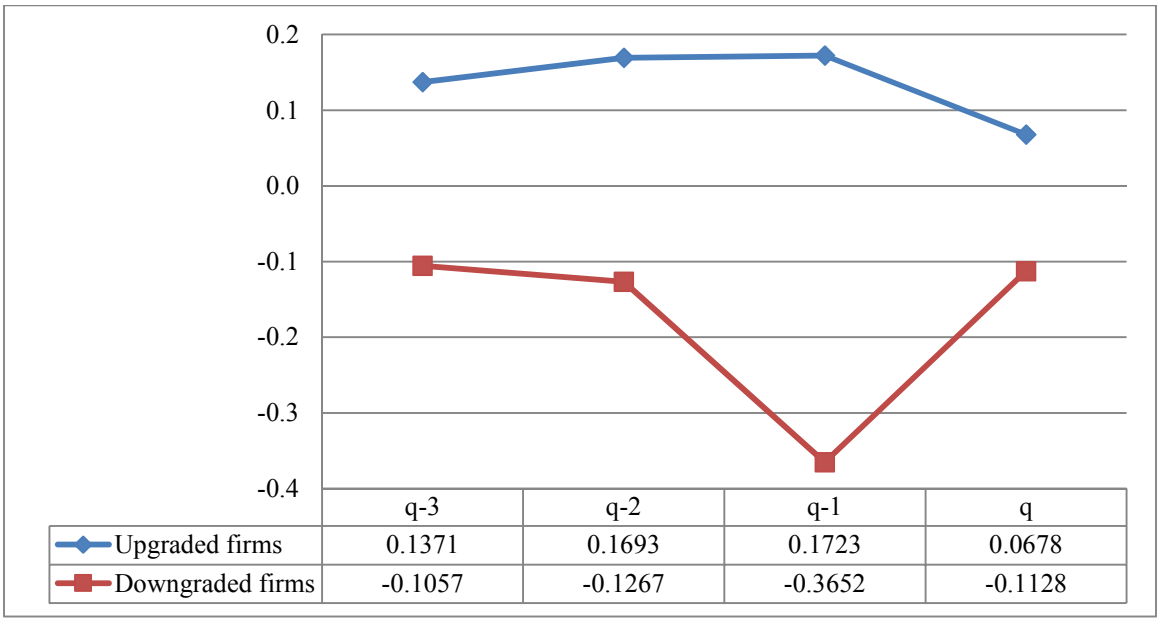
Dep. Var. =		*AF_NEWS*
	Pred. Sign	Coeff. (t-stat)
Intercept		-4.2906***
		(-44.79)
MF_NEWS	+	0.0297
		(0.35)
*MF_NEWS * DOWN*	+	0.1699***
		(3.76)
*MF_NEWS * ACCURACY*	+	0.7362***
		(10.83)
*MF_NEWS * AGREE*	+	0.1314***
		(3.16)
*MF_NEWS * HORIZON*	+	0.0021
		(0.14)
*MF_NEWS * RANGE*	-	-0.0607
		(-1.63)
*MF_NEWS * NANALYST*	?	-0.0174
		(-0.89)
Main Effects		Included
Industry & Quarter FE		Included
N		3,570
Adj. R^2		0.530

Table notes: This table presents the results from estimating the OLS regression of Equation (C.1). *AF_NEWS* = updated consensus mean analyst forecast minus the pre-existing consensus mean analyst forecast for the quarter, scaled by stock price of the previous quarter. *MF_NEWS* = management earnings forecast minus the pre-existing consensus mean analyst forecast for the quarter, scaled by stock price of the previous quarter. *DOWN* = an indicator variable set equal to one if the management earnings forecast falls below the pre-existing consensus mean analyst forecast for the quarter (i.e., *MF_NEWS* < 0), and zero otherwise. *ACCURACY* = decile ranking of negative one times the absolute value of price-deflated management earnings forecast error, scaled to range from 0 to 1. *AGREE* = an indicator variable set equal to one if the three-day cumulative abnormal (market-adjusted) returns surrounding the management earnings forecast has the same sign as management earnings forecasts news, and zero otherwise. *HORIZON* = the natural log of the number of days between the issuance of management earnings forecast and the earnings announcement date for the quarter. *RANGE* = an indicator variable set equal to one if the management earnings forecast is in the form of range forecast, and zero otherwise. *NANALYST* = the natural log of the number of analysts following the firm during the quarter. t-statistics are based on standard errors clustered by firm and by quarter. *, **, ***, indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

APPENDIX D

FIGURE AND TABLES

Figure 1
Management Earnings Guidance News Prior to Credit Rating Changes



	q-3	q-2	q-1	q
Upgraded firms	0.1371	0.1693	0.1723	0.0678
Downgraded firms	-0.1057	-0.1267	-0.3652	-0.1128

Figure notes: This figure shows the average management earnings guidance news (as percentage of stock price) in each of the four quarters leading up to a credit rating upgrade/downgrade, which occurs at the end of quarter q. Management earnings guidance news is defined as management earnings forecast minus prior analyst consensus for the quarter, scaled by stock price. In order to track management earnings guidance news from the same firms over time, the management earnings forecasts here are from a sample of firms who had issued earnings forecast for all four quarters. Nevertheless, similar patterns can be observed if such a restriction is removed.

Table 1
Sample Selection

Panel A: Sample selection

Sample Selection Criteria	Number of Forecasts	Number of Firms
First Call quarterly management earnings guidance, 1995–2010.	58,559	6,147
Retain: Earnings guidance with available Compustat data.	48,057	4,334
Retain: Earnings guidance issued between prior actual earnings announcement date and current fiscal quarter-end.	38,064	3,564
Retain: First earnings guidance of fiscal quarter.	30,732	3,564
Retain: Point and range earnings guidance.	26,373	2,971
Retain: Firms not in financial or regulated industries.	24,638	2,594
Retain: Firms with S&P long-term issuer's credit ratings at the beginning of management guidance quarter.	8,820	798
Retain: Earnings guidance with available Compustat, CRSP, and I/B/E/S data to calculate management guidance news.	5,489	669
Retain: Earnings guidance with available Compustat, CRSP, and I/B/E/S data to calculate control variables.	3,570	475
Retain: Earnings guidance without credit rating change between prior fiscal quarter-end and management guidance issuance.	3,539	473
Primary Sample	3,539	473

Panel B: Sample distribution

Calendar Year	Number of Forecasts	Percent
1995	18	0.51%
1996	26	0.73%
1997	23	0.65%
1998	65	1.84%
1999	78	2.20%
2000	77	2.18%
2001	239	6.75%
2002	312	8.82%
2003	394	11.13%
2004	384	10.85%
2005	369	10.43%
2006	351	9.92%
2007	312	8.82%
2008	305	8.62%
2009	296	8.36%
2010	290	8.19%
Total	3,539	100%

Table 2
Descriptive Statistics

Variable	N	Mean	Stdev	Q1	Median	Q3
CR_{q-1}	3,539	7.8135	3.0681	5.0000	8.0000	10.0000
ΔCR_q	3,518	-0.0014	0.2563	0.0000	0.0000	0.0000
ΔCR_{q+1}	3,495	-0.0157	0.3939	0.0000	0.0000	0.0000
ΔCR_{q+2}	3,459	-0.0312	0.5363	0.0000	0.0000	0.0000
ΔCR_{q+3}	3,433	-0.0507	0.6321	0.0000	0.0000	0.0000
MF_NEWS	3,539	0.0564	1.1477	-0.0903	0.0263	0.3068
DIFF	3,539	0.1435	1.5273	-1.0000	0.0000	1.0000
RAF_NEWS	3,539	0.0057	0.2719	-0.0805	0.0003	0.0819
ΔNANALYST	3,539	0.0931	0.4515	-0.1542	0.0572	0.3102
ΔROA	3,539	-0.0002	0.0325	-0.0049	0.0004	0.0047
ΔLEV	3,539	-0.0032	0.0745	-0.0398	-0.0111	0.0215
ΔICOVER	3,539	0.4773	72.0187	-1.7800	0.4660	2.9436
ΔSTD_ROA	3,539	-0.0001	0.0107	-0.0012	-0.0001	0.0009
ΔLOSS	3,539	-0.0054	0.3433	0.0000	0.0000	0.0000
ΔINTAN	3,539	-0.0001	0.0051	0.0000	0.0000	0.0000
ΔΔEQ	3,539	0.0181	0.3570	0.0000	0.0000	0.0000
ΔDV	3,539	0.0141	0.2148	0.0000	0.0000	0.0000
ARET	3,539	0.0199	0.2018	-0.0959	0.0076	0.1152
ΔBETA	3,539	0.0306	0.3458	-0.1603	0.0308	0.2331
ΔSTD_RET	3,539	-0.0028	0.0522	-0.0276	-0.0036	0.0194
ΔBTM	3,539	0.0209	0.2808	-0.0577	0.0112	0.0874
ΔMV	3,539	0.0395	0.4354	-0.1775	0.0580	0.2814
Δ|ABACC|	3,539	-0.0016	0.0271	-0.0107	-0.0006	0.0091
ΔTRANSP	3,539	0.0041	0.1502	-0.0189	0.0002	0.0210
IG+	3,539	0.0534	0.2249	0.0000	0.0000	0.0000
IG-	3,539	0.0757	0.2646	0.0000	0.0000	0.0000
$AVG\_CFO_{[q,q+3]}$	3,454	0.0295	0.0167	0.0196	0.0284	0.0385
$STD\_CFO_{[q,q+3]}$	3,444	0.8790	2.2601	0.3194	0.5473	1.0711

Table notes: There are a maximum of 3,539 firm-quarter observations from 1995-2010. Some variables have fewer observations due to missing data. See Appendix A for variable definitions.

Table 3
Distribution of Actual Credit Rating and Expected Credit Rating

Panel A. Distribution of Actual Credit Rating and Expected Credit Rating

Actual CR_{q-1}	Expected CR_{q-1}																
	AAA	AA+	AA	AA-	A+	A	A-	BBB+	BBB	BBB-	BB+	BB	BB-	B+	B	B-	Total Actual
AAA	0	0	12	4	11	1	0	0	0	0	0	0	0	0	0	0	28
AA+	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
AA	0	0	20	37	40	25	4	1	0	0	0	0	0	0	0	0	127
AA-	0	0	3	10	46	25	1	0	0	0	0	0	0	0	0	0	85
A+	0	0	1	4	17	58	17	24	12	0	0	0	0	0	0	0	133
A	0	0	0	8	9	160	104	89	50	5	0	0	0	0	0	0	425
A-	0	0	0	0	0	52	46	76	46	28	6	1	0	0	0	0	255
BBB+	0	0	0	0	2	46	32	80	103	45	15	5	0	0	0	0	328
BBB	0	0	0	0	0	31	28	86	166	153	37	14	0	0	0	0	515
BBB-	0	0	0	0	0	11	6	51	142	145	45	47	14	0	0	0	461
BB+	0	0	0	0	0	0	2	17	57	104	33	37	16	1	0	0	267
BB	0	0	0	0	0	0	1	5	27	39	51	79	70	6	0	0	278
BB-	0	0	0	0	0	0	0	1	19	20	23	99	153	52	6	3	376
B+	0	0	0	0	0	0	0	0	0	4	9	21	81	73	8	0	196
B	0	0	0	0	0	0	0	0	0	1	0	2	9	14	7	5	38
B-	0	0	0	0	0	0	0	0	0	0	0	0	0	6	12	8	26
Total Expected	0	0	36	63	125	410	241	430	622	544	219	305	343	152	33	16	3,539

Panel B. Frequency of the Deviation between Actual Credit Rating and Expected Credit Rating

DIFF	<= -4	-3	-2	-1	0	1	2	3	>= 4
Percentage	1.24%	3.25%	8.14%	19.30%	28.43%	22.35%	10.91%	5.06%	1.32%

Table notes: This table shows the distribution of actual credit rating by expected credit rating based on the estimation of Equation (B.1). In Panel A, actual credit ratings are presented by row and expected credit ratings are presented by column. Row and column combinations for the same rating level indicate at-predicted-rating firms. In Panel B, *DIFF* = actual rating minus expected rating, where a positive (negative) difference suggests that actual rating is more optimistic (pessimistic) than the expected rating.

Table 4
Profile (Univariate) Analysis

	(1) $\Delta CR_{q+3} < 0$ (n = 360)	(2) $\Delta CR_{q+3} = 0$ (n = 2,748)	(3) $\Delta CR_{q+3} > 0$ (n = 325)
MF_NEWS_q	-0.2117***	0.0946***	0.1403**
	(-3.02)	(4.59)	(2.25)
$DIFF_{q-1}$	0.6167***	0.2165***	-0.9015***
	(7.28)	(7.67)	(-11.74)
RAF_NEWS_q	-0.0240	0.0028	0.0631***
	(-1.15)	(0.60)	(4.37)
$\Delta NANALYST_{q-1}$	0.0890***	0.0943***	0.1172***
	(4.01)	(10.80)	(5.06)
ΔROA_{q-1}	-0.0061**	-0.0007	0.0095***
	(-2.50)	(-1.31)	(3.72)
ΔLEV_{q-1}	0.0178***	-0.0031**	-0.0340***
	(4.27)	(-2.34)	(-7.95)
$\Delta ICOVER_{q-1}$	-7.9439**	0.7806	8.5954**
	(-2.46)	(0.55)	(2.24)
ΔSTD_ROA_{q-1}	0.0009	-0.0002	-0.0007
	(1.13)	(-1.26)	(-1.29)
$\Delta LOSS_{q-1}$	0.0667***	-0.0076	-0.0615***
	(3.14)	(-1.21)	(-3.21)
$\Delta INTAN_{q-1}$	-0.0001	-0.0001	-0.0001
	(-0.33)	(-1.27)	(-0.31)
$\Delta\Delta EQ_{q-1}$	-0.0444**	0.0266***	0.0185
	(-2.32)	(3.90)	(1.03)
ΔDV_{q-1}	0.0222*	0.0135***	0.0123
	(1.89)	(3.43)	(0.82)
$ARET_{q-1}$	-0.0590***	0.0229***	0.0825***
	(-5.73)	(6.15)	(6.82)
$\Delta BETA_{q-1}$	0.0077	0.0312***	0.0373*
	(0.43)	(4.89)	(1.67)
ΔSTD_RET_{q-1}	0.0058**	-0.0032***	-0.0090***
	(2.27)	(-3.33)	(-2.83)
ΔBTM_{q-1}	0.1366***	0.0131***	-0.0588***
	(7.81)	(2.69)	(-3.09)
ΔMV_{q-1}	-0.2018***	0.0516***	0.2359***
	(-8.03)	(6.62)	(9.62)
$\Delta\lvert ABACC_{q-1}\rvert$	-0.0030*	-0.0013**	-0.0010
	(-1.72)	(-2.56)	(-0.70)
$\Delta TRANSP_{q-1}$	-0.0126*	0.0079***	-0.0071
	(-1.67)	(2.87)	(-0.71)

Table notes: This table shows the means of the determinants of credit rating changes, along with t-statistics from testing whether the means are statistically different from zero, for three groups of firms: (1) firms whose credit ratings are downgraded (i.e., $\Delta CR_{q+3} < 0$), (2) firms whose credit ratings do not change (i.e., $\Delta CR_{q+3} = 0$), and (3) firms whose credit ratings are upgraded (i.e., $\Delta CR_{q+3} > 0$) during the current and subsequent three quarters of management guidance issuance. Δ = change from quarter q-5 to quarter q-1. *, **, ***, indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

Table 5
Management Earnings Guidance News and Future Credit Rating Changes

Dep. Var. =	Pred Sign	(1) ΔCR_q Coeff. (z-stat)	(2) ΔCR_{q+1} Coeff. (z-stat)	(3) ΔCR_{q+2} Coeff. (z-stat)	(4) ΔCR_{q+3} Coeff. (z-stat)	(5) *Month_DG* Coeff. (z-stat)	(6) *Month_UG* Coeff. (z-stat)
MF_NEWS	+	0.0058	0.1203**	0.1355***	0.1703***	0.0288**	0.0332
		(0.07)	(2.23)	(2.61)	(3.38)	(2.13)	(1.36)
DIFF	-	-0.4819***	-0.4546***	-0.4106***	-0.3986***	-0.0362**	0.0634***
		(-6.59)	(-7.63)	(-8.01)	(-7.79)	(-2.01)	(2.88)
RAF_NEWS	+	0.3174	0.6377**	0.6801***	0.5760**	0.0936	-0.0429
		(0.74)	(2.24)	(2.61)	(2.40)	(1.57)	(-0.42)
ΔNANALYST	+	0.0838	0.0764	0.1055	0.1267	0.0309	-0.0020
		(0.47)	(0.65)	(1.11)	(1.48)	(0.80)	(-0.04)
ΔROA	+	1.7971	2.8177	2.9961	2.6451	-1.8150	-1.5084*
		(0.50)	(0.95)	(1.22)	(1.19)	(-1.51)	(-1.87)
ΔLEV	-	-1.6443	-3.4329***	-2.7425***	-3.7784***	0.1774	0.9316***
		(-1.26)	(-3.56)	(-3.12)	(-5.17)	(0.59)	(2.68)
ΔICOVER	+	0.0019	0.0009	0.0008	0.0011*	0.0005	-0.0006
		(1.54)	(1.13)	(0.98)	(1.95)	(1.46)	(-0.96)
ΔSTD_ROA	-	-4.7632	-6.7434	-1.8883	-2.0278	-7.6789***	2.7677
		(-0.74)	(-1.07)	(-0.32)	(-0.37)	(-2.92)	(1.02)
ΔLOSS	-	-0.4127	-0.0748	-0.0117	-0.1542	-0.0655	-0.1832*
		(-1.11)	(-0.29)	(-0.05)	(-0.83)	(-0.77)	(-1.87)
ΔINTAN	?	39.9600*	14.4261	-0.1826	4.0949	2.0953	-3.5206
		(1.89)	(1.11)	(-0.01)	(0.30)	(0.47)	(-0.77)
ΔΔEQ	?	0.0435	0.1229	0.2128	0.1636	0.0663	0.0222
		(0.11)	(0.62)	(1.30)	(1.07)	(0.83)	(0.27)
ΔDV	?	-0.1261	-0.0952	-0.4312	-0.5214*	-0.1385	-0.1179
		(-0.39)	(-0.35)	(-1.58)	(-1.75)	(-1.12)	(-0.96)
ARET	+	1.8972***	1.0398***	1.2188***	1.1141***	0.1895	0.0428
		(3.42)	(2.61)	(3.89)	(3.94)	(1.20)	(0.31)
ΔBETA	-	0.2054	0.2196	0.1316	0.0601	-0.1049	-0.1740**
		(0.78)	(1.07)	(0.65)	(0.32)	(-1.33)	(-2.51)
ΔSTD_RET	-	-0.8118	0.5892	0.4999	0.3479	-0.7167	0.1116
		(-0.32)	(0.37)	(0.38)	(0.26)	(-1.23)	(0.21)
ΔBTM	?	0.0537	-0.1836	-0.2573	-0.3209	-0.1614	0.1216
		(0.12)	(-0.79)	(-0.97)	(-1.35)	(-1.45)	(1.13)
ΔMV	+	0.6559*	0.5780**	0.6324**	0.7177***	-0.0345	-0.0999
		(1.81)	(2.14)	(2.40)	(3.04)	(-0.39)	(-1.20)
Δ|ABACC|	-	-5.4686**	-0.2924	0.2837	1.0985	-0.5076	0.8121
		(-2.20)	(-0.14)	(0.14)	(0.60)	(-0.60)	(0.78)
ΔTRANSP	+	1.0700**	0.4746	0.3587	0.4371	-0.2080	0.1562
		(2.32)	(1.37)	(1.30)	(1.36)	(-1.39)	(1.04)
Intercept		Included	Included	Included	Included	Included	Included
Industry & Quarter FE		Included	Included	Included	Included	Included	Included
N		3,518	3,495	3,459	3,433	683	568
Pseudo R^2		0.209	0.162	0.150	0.152	0.102	0.138

Table notes: This table presents the results from estimating Equation (1). *ΔCR* = change in credit rating over quarters [q, q+τ], τ = 0, 1, 2, or 3, where a positive (negative) change indicates credit rating upgrade (downgrade). *Month_DG* = the number of months from earnings guidance to next credit rating downgrade. *Month_UG* = the number of months from earnings guidance to next credit rating upgrade. *MF_NEWS* = management earnings forecast minus prior analyst consensus for the quarter, scaled by stock price of the

previous quarter. *DIFF* = actual rating minus expected rating, where a positive (negative) difference suggests that actual rating is more optimistic (pessimistic) than the expected rating based on the estimation of Equation (B.1). *RAF_NEWS* = analyst earnings forecast news orthogonal to management earnings guidance news, measured as the residual term from estimating Equation (C.1). *NANALYST* = the natural log of the number of analysts following the firm. *ROA* = income before extraordinary items divided by total assets. *LEV* = long-term debt plus short-term debt, divided by total assets. *ICOVER* = operating income before depreciation divided by interest expense. *STD_ROA* = earnings volatility, measured as standard deviation of *ROA* over most recent 16 quarters, requiring at least 8 quarters with data available. *LOSS* = an indicator variable set equal to one if income before extraordinary items is negative for the quarter, and zero otherwise. *INTAN* = intensity of intangibles, measured as research and development expense scaled by total assets. ΔEQ = an indicator variable set equal to one if change in shareholder equity during the quarter is greater than zero, and zero otherwise. *DV* = an indicator variable set equal to one if the firm pays cash dividends during the quarter, and zero otherwise. *ARET* = market-adjusted buy-and-hold return over the prior fiscal quarter. *BETA* = market beta, measured based on the market model using daily stock returns of the prior four quarters. *STD_RET* = standard deviation of monthly returns over the prior four quarters. *BTM* = book value of common equity divided by market value of common equity at the end of the quarter. *MV* = natural log of the market value of common equity at the end of the quarter. $|ABACC|$ = absolute value of abnormal accruals, see Appendix A for detailed definition. *TRANSP* = financial reporting transparency, see Appendix A for detailed definition. Except for ΔCR, Δ = change from quarter q-5 to quarter q-1. z-statistics are based on standard errors clustered by firm and by quarter. *, **, ***, indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

Table 6
Downward versus Upward Earnings Guidance

Panel A. Downward Guidance (*MF_NEWS* < 0) Sample

Dep. Var. =	Pred. Sign	(1) ΔCR_q Coeff. (z-stat)	(2) ΔCR_{q+1} Coeff. (z-stat)	(3) ΔCR_{q+2} Coeff. (z-stat)	(4) ΔCR_{q+3} Coeff. (z-stat)	(5) *Month_DG* Coeff. (z-stat)
MF_NEWS	+	0.0771	0.1075***	0.1334***	0.1817***	0.0375***
		(0.76)	(4.84)	(2.84)	(3.03)	(2.80)
DIFF	-	-0.4654***	-0.4435***	-0.4245***	-0.4252***	-0.0369**
		(-3.61)	(-5.39)	(-5.92)	(-6.88)	(-2.06)
RAF_NEWS	+	0.9318	0.9698***	0.8193***	0.6345**	0.0980*
		(1.49)	(3.43)	(3.05)	(2.01)	(1.65)
ΔNANALYST	+	0.3485	0.3121	0.4525***	0.4233**	0.0294
		(0.97)	(1.40)	(2.64)	(2.34)	(0.77)
ΔROA	+	1.3944	2.6829	1.6220	-0.3150	-1.8214
		(0.19)	(0.61)	(0.48)	(-0.09)	(-1.50)
ΔLEV	-	-0.4804	-2.6335*	-2.4029*	-3.3083***	0.1746
		(-0.27)	(-1.69)	(-1.94)	(-2.94)	(0.58)
ΔICOVER	+	0.0025	0.0015*	0.0018**	0.0015*	0.0005
		(1.28)	(1.65)	(2.18)	(1.94)	(1.48)
ΔSTD_ROA	-	7.0689	-0.7519	0.1488	-3.7959	-7.5368***
		(0.57)	(-0.10)	(0.02)	(-0.48)	(-2.87)
ΔLOSS	-	0.0338	0.2254	0.3113	0.0325	-0.0622
		(0.05)	(0.51)	(0.88)	(0.11)	(-0.72)
ΔINTAN	?	73.0660**	1.7263	-16.7110	-8.8512	2.2946
		(2.14)	(0.06)	(-0.67)	(-0.39)	(0.53)
ΔΔEQ	?	0.7403	0.4038	0.5847**	0.2305	0.0661
		(1.32)	(1.58)	(2.56)	(1.14)	(0.83)
ΔDV	?	0.3849	-0.1051	-0.4356	-0.6496	-0.1352
		(0.57)	(-0.21)	(-1.05)	(-1.61)	(-1.08)
ARET	+	2.8312***	1.3954**	1.6396***	1.8023***	0.2078
		(3.30)	(2.44)	(2.97)	(4.42)	(1.34)
ΔBETA	-	0.3407	0.1199	-0.0321	-0.1382	-0.1041
		(0.72)	(0.34)	(-0.10)	(-0.46)	(-1.32)
ΔSTD_RET	-	-4.8987	-0.1809	-1.7018	-0.6529	-0.7390
		(-1.28)	(-0.07)	(-0.79)	(-0.31)	(-1.28)
ΔBTM	?	0.0553	-0.3124	-0.5163	-0.4250	-0.1575
		(0.09)	(-0.73)	(-1.15)	(-0.93)	(-1.40)
ΔMV	+	0.7365	0.4603	0.2405	0.3683	-0.0422
		(1.52)	(1.21)	(0.53)	(0.92)	(-0.48)
Δ|ABACC|	-	-4.4379	1.6865	1.8687	1.6394	-0.5252
		(-0.95)	(0.41)	(0.53)	(0.52)	(-0.62)
ΔTRANSP	+	0.7544	0.5018	-0.0786	0.2258	-0.2165
		(1.02)	(0.95)	(-0.18)	(0.47)	(-1.44)
Intercept		Included	Included	Included	Included	Included
Industry & Quarter FE		Included	Included	Included	Included	Included
N		1,478	1,467	1,453	1,440	683
Pseudo R^2		0.315	0.227	0.200	0.125	0.102

Table 6
Downward versus Upward Earnings Guidance

Panel B. Upward Guidance (*MF_NEWS* > 0) Sample

Dep. Var. =	Pred. Sign	(1) ΔCR_q Coeff. (z-stat)	(2) ΔCR_{q+1} Coeff. (z-stat)	(3) ΔCR_{q+2} Coeff. (z-stat)	(4) ΔCR_{q+3} Coeff. (z-stat)	(5) *Month_UG* Coeff. (z-stat)
MF_NEWS	+	-0.0551	0.1953	0.1458	0.1879	-0.0178
		(-0.36)	(1.40)	(1.09)	(1.29)	(-0.50)
DIFF	-	-0.6259***	-0.4428***	-0.4045***	-0.4377***	0.0727***
		(-5.74)	(-6.17)	(-6.02)	(-5.83)	(3.27)
RAF_NEWS	+	-0.9988	-0.2366	0.4184	0.6451	-0.0607
		(-1.21)	(-0.41)	(0.75)	(1.29)	(-0.56)
ΔNANALYST	+	-0.2039	-0.0490	-0.1490	-0.1402	-0.0041
		(-0.58)	(-0.27)	(-1.07)	(-1.17)	(-0.08)
ΔROA	+	8.2806**	5.2334	7.5094***	7.6675***	-1.4789*
		(2.02)	(1.22)	(2.65)	(2.73)	(-1.76)
ΔLEV	-	-2.8138	-4.4062***	-3.5340***	-4.9890***	0.9246***
		(-1.24)	(-3.58)	(-3.47)	(-5.11)	(2.63)
ΔICOVER	+	0.0013	0.0000	-0.0009	0.0004	-0.0006
		(0.69)	(0.02)	(-0.89)	(0.52)	(-0.95)
ΔSTD_ROA	-	-14.4783	-9.7276	-2.0631	-3.1274	3.0666
		(-1.13)	(-1.08)	(-0.29)	(-0.39)	(1.12)
ΔLOSS	-	-0.6711	-0.2864	-0.3088	-0.2366	-0.1935**
		(-1.25)	(-0.80)	(-1.15)	(-0.86)	(-1.99)
ΔINTAN	?	12.1154	26.6311	12.4594	12.1640	-3.5096
		(0.64)	(1.61)	(0.70)	(0.77)	(-0.79)
ΔΔEQ	?	-0.4223	-0.0731	-0.1052	0.0924	0.0073
		(-0.68)	(-0.34)	(-0.62)	(0.55)	(0.09)
ΔDV	?	-0.6871	-0.2197	-0.4711	-0.4137	-0.1042
		(-0.94)	(-0.44)	(-1.08)	(-0.83)	(-0.84)
ARET	+	1.7395**	0.7869	0.8078*	0.6215	0.0705
		(2.01)	(1.36)	(1.74)	(1.30)	(0.50)
ΔBETA	-	-0.0644	0.2858	0.3146	0.2336	-0.1771**
		(-0.15)	(1.42)	(1.52)	(1.08)	(-2.57)
ΔSTD_RET	-	2.4723	2.2414	2.7002	0.7928	-0.0053
		(0.67)	(0.96)	(1.41)	(0.34)	(-0.01)
ΔBTM	?	-0.2269	-0.2415	-0.1494	-0.3536	0.1014
		(-0.43)	(-0.66)	(-0.44)	(-1.15)	(0.99)
ΔMV	+	0.4095	0.4200	0.6970**	0.8962***	-0.0938
		(0.73)	(1.22)	(2.20)	(2.89)	(-1.15)
Δ|ABACC|	-	-5.1385	1.3078	1.9728	1.6431	0.7893
		(-1.13)	(0.42)	(0.64)	(0.56)	(0.76)
ΔTRANSP	+	0.3808	-0.1612	0.0048	0.3031	0.1517
		(0.54)	(-0.21)	(0.01)	(0.46)	(0.97)
Intercept		Included	Included	Included	Included	Included
Industry & Quarter FE		Included	Included	Included	Included	Included
N		1,959	1,947	1,927	1,914	568
Pseudo R^2		0.308	0.154	0.141	0.142	0.137

Table notes: This table presents the results from estimating Equation (1) separately for the downward and upward guidance samples. *ΔCR* = change in credit rating over quarters [q, q+τ], τ = 0, 1, 2, or 3, where a positive (negative) change indicates credit rating upgrade (downgrade). *DG_Month* = the number of months from earnings guidance to next credit rating downgrade. *UG_Month* = the number of months from earnings guidance to next credit rating upgrade. *MF_NEWS* = management earnings forecast minus prior analyst consensus for the quarter, scaled by stock price of the previous quarter. *DIFF* = actual rating minus expected rating, where a positive (negative) difference suggests that actual rating is more optimistic (pessimistic) than the expected rating based on the estimation of Equation (B.1). *RAF_NEWS* = analyst earnings forecast news orthogonal to management earnings guidance news, measured as the residual term from estimating Equation (C.1). *NANALYST* = the natural log of the number of analysts following the firm. *ROA* = income before extraordinary items divided by total assets. *LEV* = long-term debt plus short-term debt, divided by total assets. *ICOVER* = operating income before depreciation divided by interest expense. *STD_ROA* = earnings volatility, measured as standard deviation of *ROA* over most recent 16 quarters, requiring at least 8 quarters with data available. *LOSS* = an indicator variable set equal to one if income before extraordinary items is negative for the quarter, and zero otherwise. *INTAN* = intensity of intangibles, measured as research and development expense scaled by total assets. *ΔEQ* = an indicator variable set equal to one if change in shareholder equity during the quarter is greater than zero, and zero otherwise. *DV* = an indicator variable set equal to one if the firm pays cash dividends during the quarter, and zero otherwise. *ARET* = market-adjusted buy-and-hold return over the prior fiscal quarter. *BETA* = market beta, measured based on the market model using daily stock returns of the prior four quarters. *STD_RET* = standard deviation of monthly returns over the prior four quarters. *BTM* = book value of common equity divided by market value of common equity at the end of the quarter. *MV* = natural log of the market value of common equity at the end of the quarter. |*ABACC*| = absolute value of abnormal accruals, see Appendix A for detailed definition. *TRANSP* = financial reporting transparency, see Appendix A for detailed definition. Except for *ΔCR*, *Δ* = change from quarter q-5 to quarter q-1. z-statistics are based on standard errors clustered by firm and by quarter. *, **, ***, indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

Table 7
Relevance of Management Guidance News Conditional on the Magnitude of Deviation between Actual and Expected Ratings

		MF_NEWS < 0				
		(1)	(2)	(3)	(4)	(5)
Dep. Var. =		ΔCR_q	ΔCR_{q+1}	ΔCR_{q+2}	ΔCR_{q+3}	*Month_DG*
	Pred. Sign	Coeff. (z-stat)	Coeff. (z-stat)	Coeff. (z-stat)	Coeff. (z-stat)	Coeff. (z-stat)
MF_NEWS	+	0.0808	0.0756	0.1263***	0.1998***	0.0147
		(0.98)	(1.21)	(2.94)	(3.36)	(1.17)
DIFF	-	-0.6281***	-0.4347***	-0.3983***	-0.3820***	-0.0211
		(-4.60)	(-4.79)	(-4.84)	(-5.54)	(-1.04)
*MF_NEWS * DIFF*	+	0.0162	0.0592**	0.0670**	0.0893***	0.0598***
		(0.29)	(2.07)	(2.03)	(2.60)	(4.31)
IG^+	?	1.9056**	0.3976	0.4874	-0.1084	0.1627*
		(2.24)	(0.73)	(0.98)	(-0.17)	(1.96)
MF_NEWS * IG^+	+	0.0572	0.8893**	1.1010***	-0.6169	0.1439***
		(0.27)	(1.99)	(3.56)	(-0.60)	(2.93)
IG^-	?	-1.0482	-0.2541	-0.0723	0.0318	0.1813*
		(-1.35)	(-0.43)	(-0.15)	(0.07)	(1.91)
MF_NEWS * IG^-	?	0.4801	0.3047	0.1276	0.1340	0.5566***
		(1.29)	(0.82)	(0.41)	(0.42)	(3.04)
Controls & Intercept		Included	Included	Included	Included	Included
Industry & Quarter FE		Included	Included	Included	Included	Included
N		1,478	1,467	1,453	1,440	683
Pseudo R^2		0.332	0.234	0.206	0.196	0.112

Table notes: This table presents the results from estimating Equation (2) for the downward guidance sample. ΔCR = change in credit rating over quarters [q, q+τ], τ = 0, 1, 2, or 3, where a positive (negative) change indicates credit rating upgrade (downgrade). *DG_Month* = the number of months from earnings guidance to next credit rating downgrade. *MF_NEWS* = management earnings forecast minus prior analyst consensus for the quarter, scaled by stock price of the previous quarter. *DIFF* = actual rating minus expected rating, where a positive (negative) difference suggests that actual rating is more optimistic (pessimistic) than the expected rating based on the estimation of Equation (B.1). IG^+ = an indicator set equal to one if a firm's actual credit rating is investment grade while the expected credit rating is non-investment grade, and zero otherwise. IG^- = an indicator set equal to one if a firm's actual credit rating is non-investment grade while the expected credit rating is investment grade, and zero otherwise. z-statistics are based on standard errors clustered by firm and by quarter. *, **, ***, indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

Table 8
Relevance of Management Guidance News Conditional on the Persistence of Deviation between Actual and Expected Ratings

		MF_NEWS < 0					
		Full Sample	Exclude *DIFF* > 5 Years	Exclude *DIFF* > 1 Years	Full Sample	Exclude *DIFF* > 5 Years	Exclude *DIFF* > 1 Years
		(1)	(2)	(3)	(4)	(5)	(6)
Dep. Var. =		ΔCR_{q+3}	ΔCR_{q+3}	ΔCR_{q+3}	*Month_DG*	*Month_DG*	*Month_DG*
	Pred Sign	Coeff. (z-stat)	Coeff. (z-stat)	Coeff. (z-stat)	Coeff. (z-stat)	Coeff. (z-stat)	Coeff. (z-stat)
MF_NEWS	+	0.1998***	0.2302***	0.3526***	0.0147	0.0240	0.0268
		(3.36)	(3.32)	(3.79)	(1.17)	(1.41)	(0.85)
DIFF	-	-0.3820***	-0.4121***	-0.5763***	-0.0211	-0.0260	0.0702
		(-5.54)	(-4.08)	(-2.87)	(-1.04)	(-0.95)	(1.45)
*MF_NEWS * DIFF*	+	0.0893***	0.0967**	0.1996**	0.0598***	0.0603***	0.1142***
		(2.60)	(2.09)	(2.02)	(4.31)	(2.92)	(2.80)
IG^+	?	-0.1084	0.3803	-0.6156	0.1627*	0.1499	-0.1198
		(-0.17)	(0.61)	(-0.69)	(1.96)	(1.25)	(-0.65)
*MF_NEWS * IG^+*	+	-0.6169	0.0596	-1.6190	0.1439***	0.1260**	0.0415
		(-0.60)	(0.05)	(-1.57)	(2.93)	(2.43)	(0.82)
IG^-	?	0.0318	-0.3077	-1.2748*	0.1813*	0.1940**	-0.1520
		(0.07)	(-0.63)	(-1.66)	(1.91)	(2.11)	(-0.94)
*MF_NEWS * IG^-*	?	0.1340	0.0674	-0.3698*	0.5566***	0.4588**	-0.2038
		(0.42)	(0.23)	(-1.88)	(3.04)	(2.48)	(-0.53)
Controls & Intercept		Included	Included	Included	Included	Included	Included
Industry & Quarter FE		Included	Included	Included	Included	Included	Included
N		1,440	1,259	756	683	557	324
Pseudo R^2		0.196	0.191	0.286	0.112	0.149	0.197

Table notes: This table presents the results from estimating Equation (2) for the restricted downward guidance samples. ΔCR = change in credit rating over quarters [q, q+τ], τ = 0, 1, 2, or 3, where a positive (negative) change indicates credit rating upgrade (downgrade). *DG_Month* = the number of months from earnings guidance to next credit rating downgrade. *MF_NEWS* = management earnings forecast minus prior analyst consensus for the quarter, scaled by stock price of the previous quarter. *DIFF* = actual rating minus expected rating based on the estimation of Equation (B.1). IG^+ = an indicator set equal to one if a firm's actual credit rating is investment grade while the expected credit rating is non-investment grade, and zero otherwise. IG^- = an indicator set equal to one if a firm's actual credit rating is non-investment grade while the expected credit rating is investment, and zero otherwise. z-statistics are based on standard errors clustered by firm and by quarter. *, **, ***, indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

Table 9
Relevance of Management Guidance News Conditional on the Change in Reliability of Alternative Information Sources

		MF_NEWS < 0					
ΔALT_SRCS =		(-1) * *ΔTRANSP*	*ΔINTAN*	(-1) * *ΔNANALYST*	(-1) * *ΔTRANSP*	*ΔINTAN*	(-1) * *ΔNANALYST*
		(1)	(2)	(3)	(4)	(5)	(6)
Dep. Var. =		ΔCR_{q+3}	ΔCR_{q+3}	ΔCR_{q+3}	*Month_DG*	*Month_DG*	*Month_DG*
		Coeff. (z-stat)	Coeff. (z-stat)	Coeff. (z-stat)	Coeff. (z-stat)	Coeff. (z-stat)	Coeff. (z-stat)
MF_NEWS	+	0.1711***	0.1609**	0.1819***	0.0372***	0.0334**	0.0368***
		(3.15)	(2.53)	(3.92)	(2.84)	(2.53)	(2.73)
ΔALT_SRCS	?	0.3984	7.6818	-0.2758	0.7343***	3.4333	-0.0230
		(0.76)	(0.44)	(-1.46)	(3.43)	(0.92)	(-0.57)
*MF_NEWS * ΔALT_SRCS*	+	0.5156***	13.9091***	0.2447**	0.2491***	1.5040*	0.0203
		(2.85)	(4.65)	(2.32)	(4.05)	(1.87)	(0.57)
DIFF	-	-0.4213***	-0.4237***	-0.4285***	-0.0346*	-0.0366**	-0.0369**
		(-6.86)	(-6.90)	(-6.90)	(-1.94)	(-2.05)	(-2.06)
Controls & Intercept		Included	Included	Included	Included	Included	Included
Industry & Quarter FE		Included	Included	Included	Included	Included	Included
N		1,440	1,440	1,440	683	683	683
Pseudo R^2		0.208	0.196	0.196	0.106	0.102	0.102

Table notes: This table presents the results from estimating Equation (3) for the downward guidance sample. *ΔCR* = change in credit rating over quarters [q, q+τ], τ = 0, 1, 2, or 3, where a positive (negative) change indicates credit rating upgrade (downgrade). *DG_Month* = the number of months from earnings guidance to next credit rating downgrade. *MF_NEWS* = management earnings forecast minus prior analyst consensus for the quarter, scaled by stock price of the previous quarter. *TRANSP* = financial reporting transparency, see Appendix A for detailed definition. *INTAN* = intensity of intangibles, measured as research and development expense scaled by total assets. *NANALYST* = the natural log of the number of analysts following the firm. *DIFF* = actual rating minus expected rating, where a positive (negative) difference suggests that actual rating is more optimistic (pessimistic) than the expected rating based on the estimation of Equation (B.1). Except for *ΔCR*, *Δ* = change from quarter q-5 to quarter q-1. z-statistics are based on standard errors clustered by firm and by quarter. *, **, ***, indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

Table 10
Management Earnings Guidance News and Future Cash Flows Properties

		MF_NEWS < 0		*MF_NEWS* > 0	
		(1)	(2)	(3)	(4)
$CFO_{[q, q+3]}$ =		*AVG_CFO*	*STD_CFO*	*AVG_CFO*	*STD_CFO*
	Pred. Sign	Coeff. (t-stat)	Coeff. (t-stat)	Coeff. (t-stat)	Coeff. (t-stat)
Intercept		-0.0075	0.2460	-0.0261***	-3.9715***
		(-1.44)	(0.28)	(-4.07)	(-6.19)
MF_NEWS	+/-	0.0009**	-0.0917*	0.0006	0.0403
		(2.54)	(-1.80)	(0.98)	(0.32)
$CFO_{[q-4, q-1]}$	+	0.5362***	0.1263**	0.5481***	-0.0213
		(13.83)	(2.35)	(17.12)	(-0.36)
DIFF	?	0.0009***	-0.0336	0.0010***	-0.0789*
		(2.81)	(-0.89)	(3.27)	(-1.84)
RAF_NEWS	+/-	0.0009	0.3660	0.0017	-0.7993**
		(0.72)	(1.33)	(0.80)	(-2.35)
ΔNANALYST		0.0009	0.1010	-0.0001	-0.1290
		(1.01)	(0.85)	(-0.15)	(-1.30)
ΔROA		0.0057	-3.1804	0.0225	2.0806
		(0.37)	(-1.55)	(1.40)	(0.58)
ΔLEV		0.0005	0.6116	0.0082	-0.7552
		(0.07)	(0.68)	(1.47)	(-0.80)
ΔICOVER		0.0000*	-0.0003	0.0000***	-0.0000
		(1.93)	(-0.81)	(3.00)	(-0.05)
ΔSTD_ROA		-0.0354	-3.7483	0.0544	-3.5951
		(-0.83)	(-0.76)	(1.12)	(-0.41)
ΔLOSS		-0.0014	-0.3123	-0.0009	-0.0234
		(-1.35)	(-1.26)	(-0.90)	(-0.09)
ΔINTAN		0.0843*	-7.7703	0.0051	-14.3829
		(1.77)	(-0.77)	(0.08)	(-1.21)
ΔΔEQ		0.0003	-0.1239	-0.0004	0.2270
		(0.29)	(-0.69)	(-0.49)	(1.60)
ΔDV		0.0006	0.1463	0.0027	0.0839
		(0.30)	(0.33)	(1.41)	(0.31)
ARET		0.0043	-0.0869	0.0026	-0.1904
		(1.47)	(-0.21)	(1.36)	(-0.55)
ΔBETA		-0.0004	-0.1835	0.0002	-0.0524
		(-0.29)	(-0.79)	(0.12)	(-0.23)
ΔSTD_RET		-0.0156	0.8578	-0.0229***	1.6515
		(-1.58)	(0.59)	(-2.67)	(0.88)
ΔBTM		-0.0010	0.6378	0.0061**	-0.0798
		(-0.50)	(1.23)	(2.01)	(-0.20)
ΔMV		0.0004	0.2816	0.0057***	-0.0016
		(0.23)	(1.07)	(2.81)	(-0.01)
Δ|ABACC|		-0.0156	-2.3321	-0.0227*	0.4479
		(-0.91)	(-0.62)	(-1.72)	(0.17)
ΔTRANSP		-0.0018	0.1856	-0.0025	0.0241
		(-0.51)	(0.35)	(-0.87)	(0.05)
N		1,489	1,485	1,965	1,959
Adj. R^2		0.405	0.103	0.461	0.064

Table notes: This table presents the results from estimating the OLS of Equation (4) separately for the downward and upward guidance samples. $AVG\_CFO_{[q, q+3]}$ = level of future cash flows, measured as the mean of operating cash flows scaled by beginning total assets over quarters [q, q+3]. $STD\_CFO_{[q, q+3]}$ = volatility of future cash flows, measured as |standard deviation of operating cash flows/mean of operating cash flows| over quarters [q, q+3], where operating cash flows are scaled by beginning total assets. *MF_NEWS* = management earnings forecast minus prior analyst consensus for the quarter, scaled by stock price of the previous quarter. *DIFF* = actual rating minus expected rating, where a positive (negative) difference suggests that actual rating is more optimistic (pessimistic) than the expected rating based on the estimation of Equation (B.1). *RAF_NEWS* = analyst earnings forecast news orthogonal to management earnings guidance news, measured as the residual term from estimating Equation (C.1). *NANALYST* = the natural log of the number of analysts following the firm. *ROA* = income before extraordinary items divided by total assets. *LEV* = long-term debt plus short-term debt, divided by total assets. *ICOVER* = operating income before depreciation divided by interest expense. *STD_ROA* = earnings volatility, measured as standard deviation of *ROA* over most recent 16 quarters, requiring at least 8 quarters with data available. *LOSS* = an indicator variable set equal to one if income before extraordinary items is negative for the quarter, and zero otherwise. *INTAN* = intensity of intangibles, measured as research and development expense scaled by total assets. ΔEQ = an indicator variable set equal to one if change in shareholder equity during the quarter is greater than zero, and zero otherwise. *DV* = an indicator variable set equal to one if the firm pays cash dividends during the quarter, and zero otherwise. *ARET* = market-adjusted buy-and-hold return over the prior fiscal quarter. *BETA* = market beta, measured based on the market model using daily stock returns of the prior four quarters. *STD_RET* = standard deviation of monthly returns over the prior four quarters. *BTM* = book value of common equity divided by market value of common equity at the end of the quarter. *MV* = natural log of the market value of common equity at the end of the quarter. $|ABACC|$ = absolute value of abnormal accruals, see Appendix A for detailed definition. *TRANSP* = financial reporting transparency, see Appendix A for detailed definition. Industry and quarter fixed effects are included. Δ = change from quarter q-5 to quarter q-1. t-statistics are based on standard errors clustered by firm and by quarter. *, **, ***, indicate statistical significance at the 10%, 5%, and 1% levels, respectively.